ORDER NO. MB9301038C2

Service Manual

Compact Disc Player

SL-PG340A

COMPACT disc DIGITAL AUDIO

DIGITAL

MASH*
multi-stage noise shaping

Colour

(K) ..... Black Type

Area

Suffix for Model No.	Area	Colour
(E)	Europe	(K)
(EB)	Great Britain	
(EG)	Germany and Italy	

*
- Technics (or Panasonic) developed the world's first MASH type DAC and ADC. MASH technology was invented by NTT (LSI Labs).
- MASH is a trademark of NTT.

SL-PG320A TRAVERSE DECK SERIES (RAD0301-1)

SPECIFICATIONS

(DIN 45 500)

■ Audio

No. of channels	2 (left and right, stereo)
Frequency response	2–20,000 Hz, ±0.5 dB
Output voltage	2 V (at 0 dB)
Dynamic range	96 dB)
S/N	100 dB
Harmonic distortion	0.0025% (1 kHz, 0 dB)
Total harmonic distortion	0.004% (1 kHz, 0 dB)
Wow and flutter	Below measurable limit
DA converter	MASH (1 bit)
Output impedance	600Ω
Load impedance	More than 10 kΩ

■ Pickup

Wavelength	780 nm
Laser Power	No hazardous radiation is emitted (with safety protection)

■ General

Power consumption	10 W
Power supply	AC 50/60 Hz, 230–240 V
Dimensions (W×H×D)	430×92×283 mm
Weight	3.6 kg

Note:
Specifications are subject to change without notice.
Weight and dimensions are approximate.

Technics

■ CONTENTS

	Page
HANDLING PRECAUTIONS FOR TRAVERSE DECK	2
PRECAUTION OF LASER DIODE	2, 3
ACCESSORIES	3
INSTALLATION	3
CAUTION FOR AC MAINS LEAD	4
CONCERNING COMPACT DISCS	5
CLEANING OF LENS	5
CONNECTIONS	6
LOCATION OF CONTROLS	6, 7
BASIC OPERATING PROCEDURE	8
DISASSEMBLY INSTRUCTIONS	9~11
CHECKING OF THE MAIN P.C.B.	11
CHECKING OF THE SERVO P.C.B.	12
BLOCK DIAGRAM	13, 14
SCHEMATIC DIAGRAM	15~20
PRINTED CIRCUIT BOARD DIAGRAM	21~24
WIRING CONNECTION DIAGRAM	25
TROUBLESHOOTING GUIDE	26~28
MEASUREMENTS AND ADJUSTMENTS	29, 30
TERMINAL FUNCTION OF IC'S	31~34
REPLACEMENT PARTS LIST	35~37, 41, 42
LOADING UNIT PARTS LOCATION	38
CABINET PARTS LOCATION	39, 40

■ HANDLING PRECAUTIONS FOR TRAVERSE DECK

The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by static electricity of clothes or human body.
So, be careful of electrostatic breakdown during repair of the traverse deck (optical pickup).

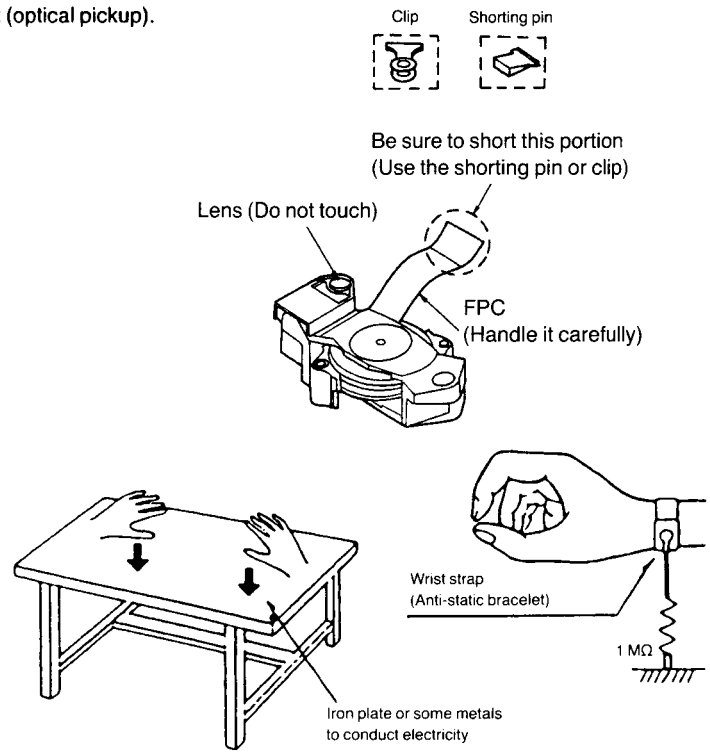
•Handling of traverse deck (optical pickup)

1. Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
2. To prevent the breakdown of the laser diode, an anti-static shorting pin is inserted into the flexible board (FPC board). When removing or connecting the short pin, finish the job in as short time as possible.
3. Take care not to apply excessive stress to the flexible board (FPC board).

•Grounding for electrostatic breakdown prevention

1. Human body grounding
   Use the anti-static wrist strap to discharge the static electricity from your body.
2. Work table grounding
   Put a conductive material (sheet) or steel sheet on the area where the traverse deck (optical pickup) is placed, and ground the sheet.

Caution:
The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).



■ PRECAUTION OF LASER DIODE

CAUTION: This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pick up lens.
Wave length: 780 nm
Maximum output radiation power from pick up: 100 μW/VDE

Laser radiation from the pick up unit is safety level, but be sure the followings:

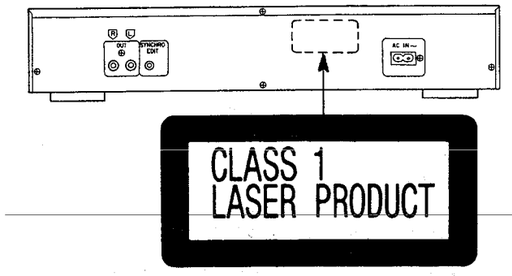
1. Do not disassemble the optical pick up unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not lock at the focus lens using optical instruments.
4. Recommend not to lock at pick up lens for a long time.

ACHTUNG: Dieses produkt enthält eine laserdiode. Im eingeschalteten zustand wird unsichtbare laserstrahlung von der lasereinheit abgestrahlt.

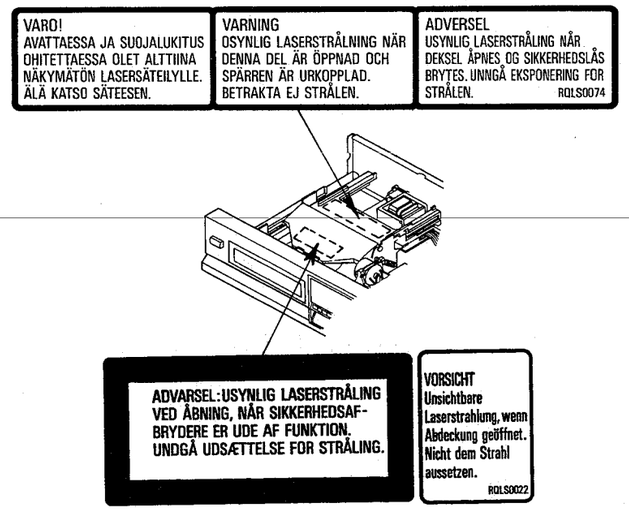
Wellenlänge: 780 nm
Maximale strahlungsleistung der laserinhelt: 100 μW/VDE

Die strahlung an der lasereinheit ist ungefährlich, wenn folgende punkte beachtet werden:

1. Die lasereinheit nicht zerlegen, da die strahlung an der freigelegten laserdiode gefähriich ist.
2. Den werksseitig justierten einstellregler der lasereinreit nicht verstellen.
3. Nicht mit optischen instrumenten in die fokussierlinse blicken.
4. Nicht über längere zeit in die fokussierlinse blicken.

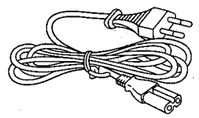


LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT

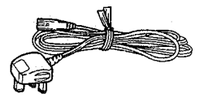

VARO!
AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTÖN LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING
OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.
ADVERSEL
USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.
RQLS0074
ADVARSEL: USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VORSICHT
Unsichtbare Laserstrahlung, wenn Abdeckung geöffnet. Nicht dem Strahl aussetzen.
RQLS0022

■ ACCESSORIES

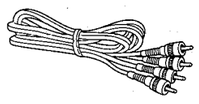
Note:
The configuration of the AC power supply cord differs according to area.



AC power supply cord
for (E) and (EG) areas...(RJA0018-1K) 1



for (EB) area...(VJA0733) 1

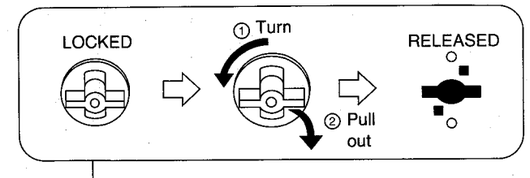


Stereo connection cable
(SJP2249-3) 1

■ INSTALLATION

Before placement

Two transport security devices are secured to prevent the optical pickup from damage during transport.
Be sure to release them before use.


LOCKED
① Turn
RELEASED
② Pull out
Insert them here after removing. Turn clockwise by 90° to secure them.
Soft cloth or similar material (to prevent scratches)

Note:
When transporting the unit, be sure to remove the compact disc from inside the unit. And replace the transport security devices again following the reverse order not to damage the optical pickup.

Notes of placement

■ **This unit is a precision instrument. Be sure to place it on a flat surface.**

■ **Avoid places such as the following:**
- Near any equipment or device that generates strong magnetism.
- On any heat-generating equipment or device, or in any place where the temperature is high (35°C or higher).
- Extremely cold place (5°C or below).
- Near a tuner or TV. (It may cause noise in the broadcast, or disturbance of the TV picture.)

■ **When carrying or storing the unit, handle it with care so it is not subjected to any strong bumps.**
Always remove the disc before storing the unit for any period of time.

■ **To avoid problems due to vibration**
- Do not place a book or similar object under this unit.
- Do not route the connection cables (of this or other units) across the operation panel, across the top, or under the unit.

■ CAUTION FOR AC MAINS LEAD

(For United Kingdom)

("EB" area code model only)

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.
Check for the ASTA mark ⓐ or the BSI mark ⓚ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local dealer.

CAUTION!
IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.
If in any doubt please consult a qualified electrician.

IMPORTANT

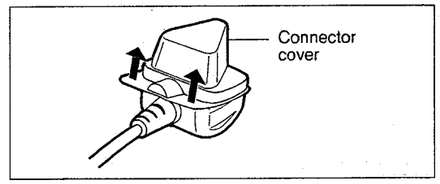
The wires in this mains lead are coloured in accordance with the following code:
Blue: Neutral, Brown: Live.
As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black or Blue.
The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER E, BY THE EARTH SYMBOL ⏚ OR COLOURED GREEN OR GREEN/YELLOW.

THIS PLUG IS NOT WATERPROOF—KEEP DRY.

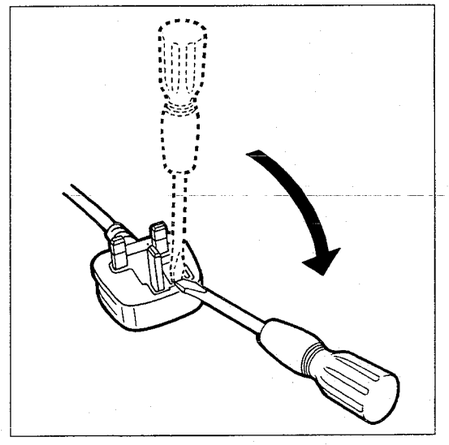
Before use

Remove the connector cover as follows.

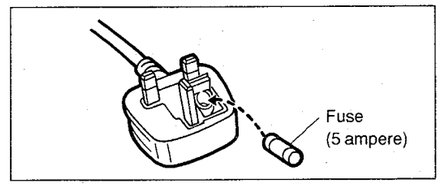


How to replace the fuse

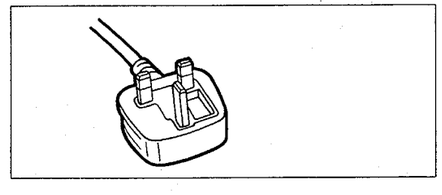
1. Open the fuse cover with a screwdriver.



2. Replace the fuse.



3. Close the fuse cover.



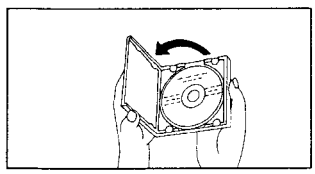
■ CONCERNING COMPACT DISCS

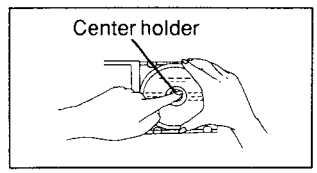
Only compact discs having this mark can be used with this unit.

COMPACT disc DIGITAL AUDIO

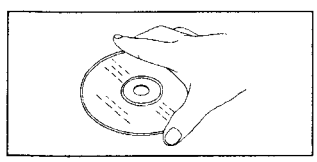
Handling precautions

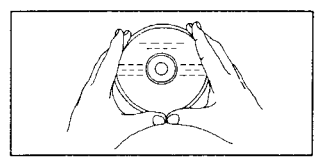
To open the case, gently press the sides of the top, holding the top at both sides.



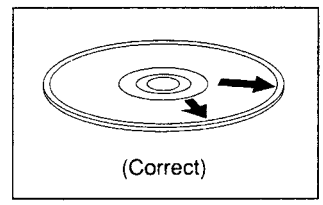


- To remove the disc from the case, press the center holder and lift the disc, holding by the edges.
- To return the disc to the case, insert the disc with label facing up and press downward at the center.
- Hold compact discs by the edges so the surface is not soiled with fingerprints. Fingerprints, dirt and scratches can cause skipping and distortion.





- Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.
- If the surface is soiled, wipe gently with a soft, damp (water only) cloth.
- Always move the cloth directly outward from the center of the disc, not in a circular motion as with standard phonograph records.



- If the disc is brought from a cold to a warm environment, moisture may form on the disc. Wipe this off with a soft, dry, lint-free cloth before using the disc.
- Do not write on the label side with a ball-point pen or other writing instrument.

Storage precautions

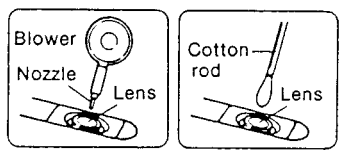
Be sure to store discs in their cases to protect them from dust, scratches and warping.
Do not place or store discs in the following places:
1) Locations exposed to direct sunlight.
2) Humid or dusty locations.
3) Locations directly exposed to a heat outlet or heating appliance.
4) In the glove compartment or rear ledge of an automobile.

■ CLEANING OF LENS

If the lens is stained causing sound skip or operation failure, open the top cover by pressing the open button, and clean the lens.

• To remove dust or dirt

Blow the lens with the blower provided in the cleaning kit to remove dust or dirt.



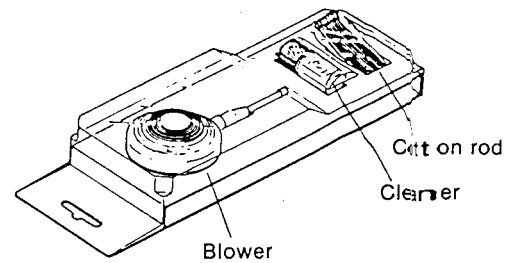
• To remove fingerprint

If the blower is not enough, moisten the cotton rod with the lens cleaner solution and wipe the lens with it from center of the lens to outside.

Cautions:

- Do not directly apply the cleaner solution to the lens. Do not apply too much solution to the cotton rod or otherwise the solution will flow into the player.
- Wipe the lens carefully. Do not give too much stress to the lens or otherwise it may scratch the lens or cause optical pickup trouble.
- If the solution should be too much applied, wipe the lens with a dry cotton rod.

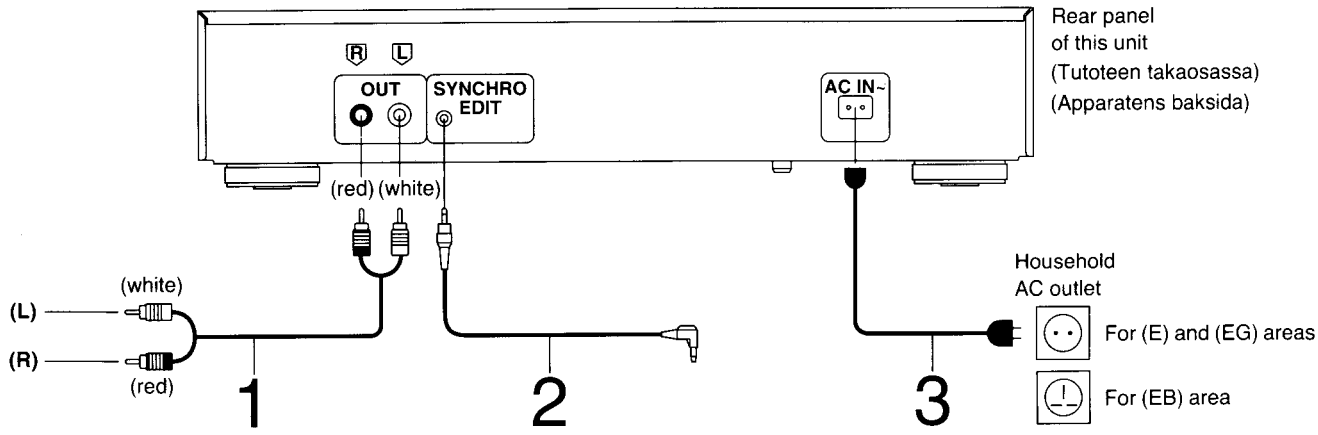
Lens cleaning kit (Part No. : SZZP1038C)



■ CONNECTIONS

Before making connections, be sure that the power of this unit and all other system components is first turned off.
See the operating instructions of the amplifier or the cassette deck for details.

Note:
The configuration of the AC outlet and AC power supply cord differs according to area.

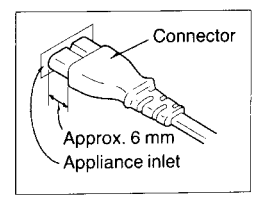


1 **Connect the stereo connection cable (included) to the "CD" or "AUX" terminals of the amplifier.**

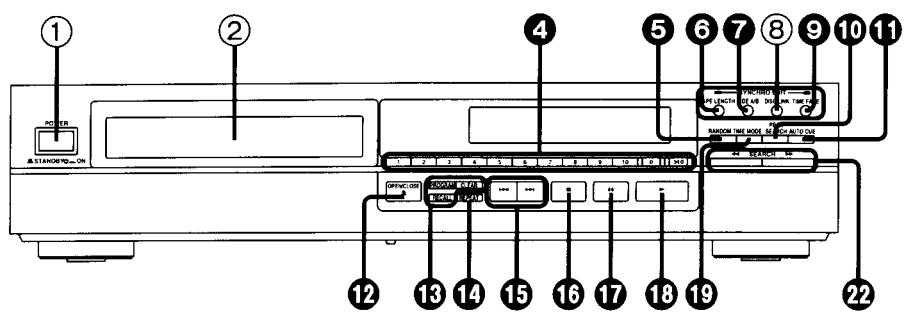
2 **Connect the synchro edit cable (included with the cassette deck) to the "SYNCHRO EDIT" terminal of the Technics cassette deck.**

3 **Connect the AC power supply cord (included) to the "AC OUTLET" of the amplifier or the household AC outlet.**

Insertion of Connector
Even when the connector is perfectly inserted, depending on the type of inlet used, the front part of the connector may jut out as shown in the drawing.
However there is no problem using the unit.



■ LOCATION OF CONTROLS



Control section

Numbers with black background (for example ❹) indicate functions available on the remote control.

① **Power "STANDBY ⏻/ON" switch (POWER, ▮ STANDBY ⏻ ▬ ON)**
This switch switches ON and OFF the secondary circuit power only. The unit is in the "standby" condition when this switch is set to the STANDBY ⏻ position. Regardless of the switch setting, the primary circuit is always "live" as long as the power cord is connected to an electrical outlet.

② **Disc tray**

❹ **Numeric buttons (1–10, 0, >10)**

❺ **Random play button (RANDOM)**

❻ **Tape length button (TAPE LENGTH)**

❼ **Tape side select button (SIDE A/B)**

⑧ **Disc link button (DISC LINK)**

❾ **Time fade button (TIME FADE)**

❿ **Peak search button (PEAK SEARCH)**

⓫ **Auto cue button (AUTO CUE)**

⓬ **Disc tray open/close button (▲ OPEN/CLOSE)**

⓭ **Buttons for program function**
- **Program button (PROGRAM)**
- **Clear button (CLEAR)**
- **Recall button (RECALL)**

⓮ **Repeat button (REPEAT)**

⓯ **Skip buttons (|◀◀, ▶▶|)**

⓰ **Stop button (■)**

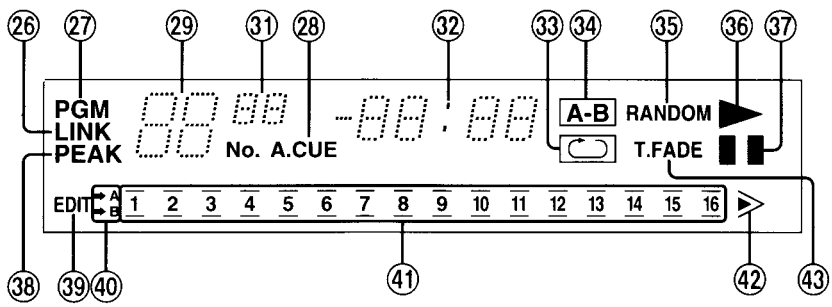
⓱ **Pause button (❚❚)**

⓲ **Play button (▶)**

⓳ **Time mode select button (TIME MODE)**

㉒ **Search buttons (◀◀ SEARCH ▶▶)**

Display section



㉖ **Disc link indicator (LINK)**

㉗ **Program indicator (PROGRAM)**

㉘ **Auto cue indicator (A.CUE)**

㉙ **Track number display**

㉚ **Level control indicator (LEVEL)**
(Only for model SL-PG440A)

㉛ **Index/program sequence display**

㉜ **Time display**

㉝ **Repeat indicator (⟲)**

㉞ **A-B repeat indicator (A-B)**

㉟ **Random play indicator (RANDOM)**

㊱ **Play indicator (▶)**

㊲ **Pause indicator (❚❚)**

㊳ **Peak search indicator (PEAK)**

㊴ **Compact disc edit indicator (EDIT)**

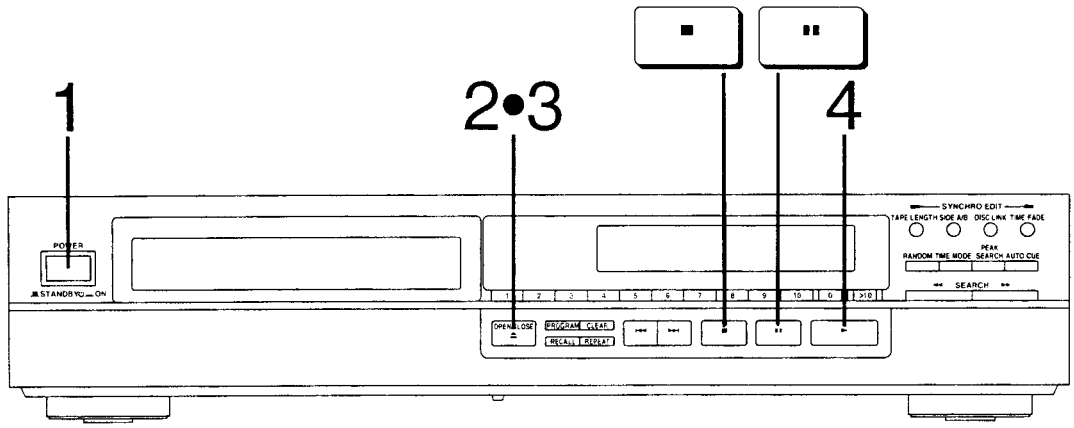
㊵ **Tape side indicator (➡A , ➡B)**

㊶ **Track number indicator (1 – 20)**

㊷ **"Over" mark (▷)**

㊸ **Time fade/fade out indicator (T.FADE)**

■ BASIC OPERATING PROCEDURE

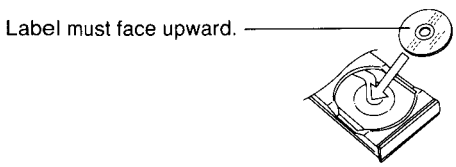


1 Press POWER to switch on the power.

If there is a disc in the disc tray, play will start from the first track.

2 Press open/close button ▲ to open the disc tray and insert a disc.

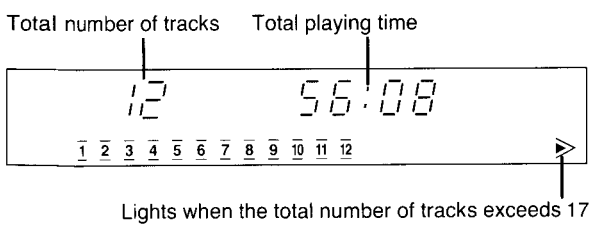
(Also available from the remote control)



Before attempting to use the remote control transmitter to open the disc tray, make sure that there are no obstructions in front of the unit.

3 Press open/close button ▲ again to close the disc tray.

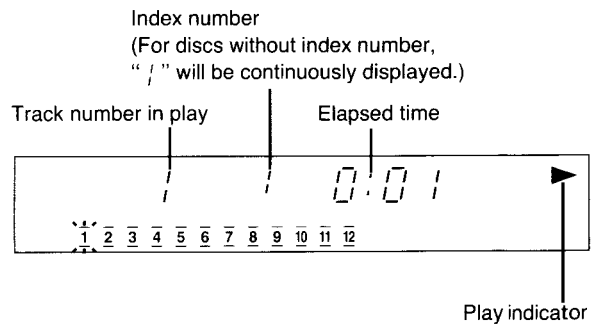
(Also available from the remote control)



- The total playing time displayed includes the silent sections between tracks. For this reason, it may be a few seconds longer than the playing time indicated on the disc.
- You can skip this step and press play button ▶. The disc tray will be automatically closed and then play will start from the first track.

4 Press play button ▶.

(Also available from the remote control)


Index number
(For discs without index number,
" / " will be continuously displayed.)
Track number in play
Elapsed time
0:01
1 2 3 4 5 6 7 8 9 10 11 12
Play indicator

The unit stops automatically when the last track finishes playing.

To stop disc play

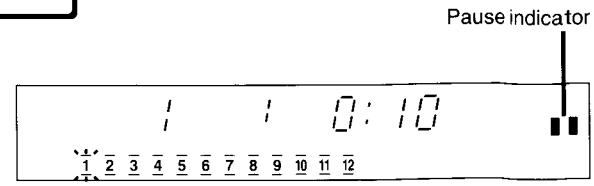
(Also available from the remote control)

Press stop button ■.

To temporarily stop disc play

(Also available from the remote control)

Press pause button II.



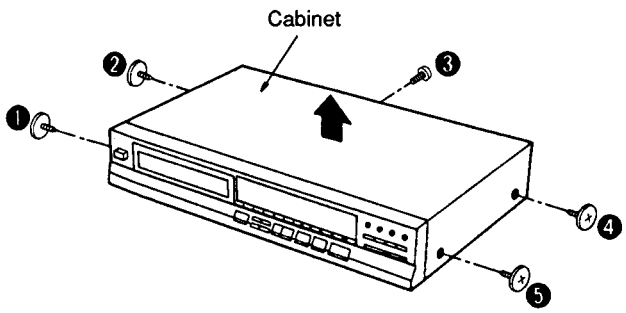
Press play button ▶ to resume play.

■ DISASSEMBLY INSTRUCTIONS

Warning: This product uses a laser diode. Refer to caution statements on page 2.
ACHTUNG: Die lasereinheit nicht zerlegen.
Die lasereilnheit dart nur gegen eine vom hersteller speziferte einheit ausgetauscht werden.
"ATTENTION SERVICER" Some chassis components may have sharp edges. Be careful when disassembling and servicing.

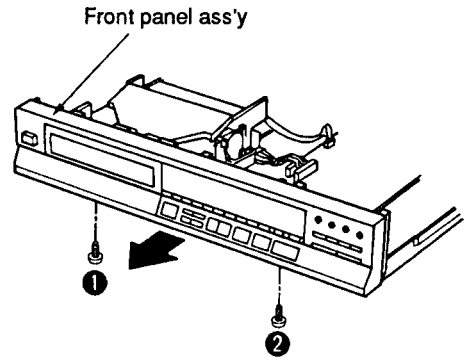
*** This CD player is equipped with FPC boards, so handle them with care during disassembly and reassembly.**

Ref. No. 1	Removal of the cabinet
Procedure 1	



1. Remove the 5 screws (❶~❺).
2. Remove the cabinet in the direction of arrow.

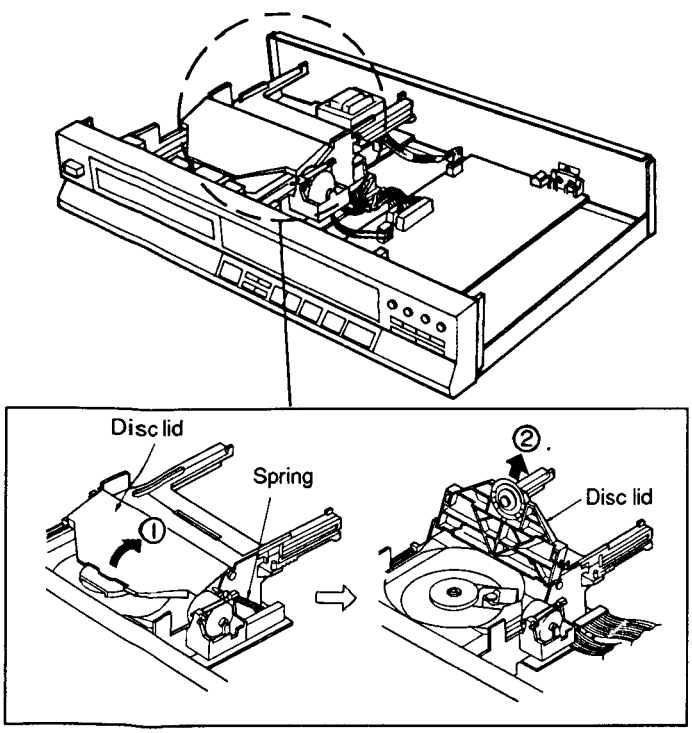
Ref. No. 2	Removal of the front panel ass'y
Procedure 1→2	



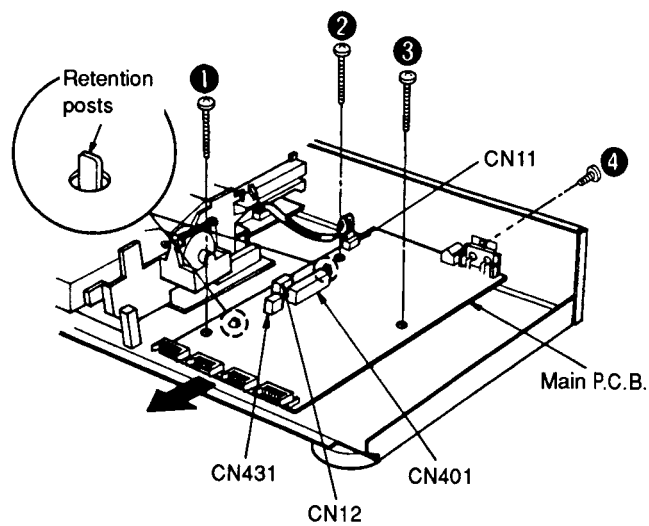
1. Remove the 2 screws (❶, ❷).
2. Remove the front panel ass'y in the direction of arrow.

Ref. No. 3	Removal of the disc lid
Procedure 1→3	

1. Remove the spring.
2. Move the disc lid in the direction of arrow ① and pull out this in the direction of arrow ②.



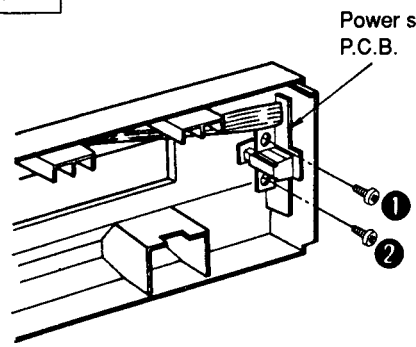
Ref. No. 4	Removal of the main P.C.B.
Procedure 1→4	



1. Remove the 4 connectors (CN11, CN12, CN401, CN431).
2. Remove the 4 screws (❶~❹).
3. Lift the main P.C.B. off the retention posts on the chassis.
4. Remove the main P.C.B. in the direction of arrow.

Ref. No. 5	Removal of the power switch P.C.B.

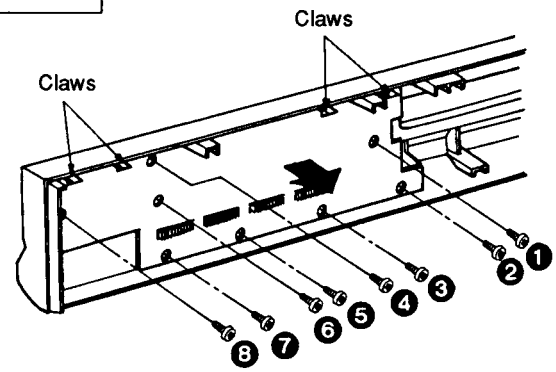
Procedure
1→2→5



•Remove the 2 screws (❶, ❷).

Ref. No. 6	Removal of the operation P.C.B.

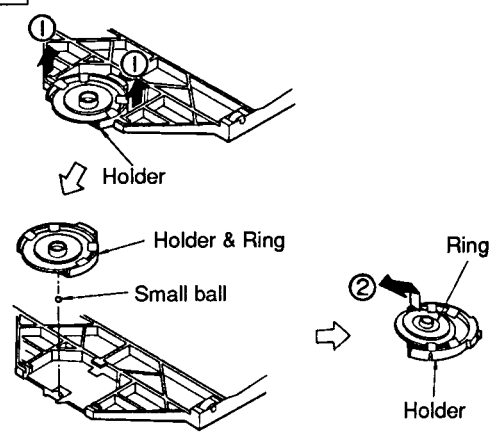
Procedure
1→2→6



1. Remove the 8 screws (❶~❽).
2. Release the 4 claws.

Ref. No. 7	Removal of the holder and ring

Procedure
1→3→7

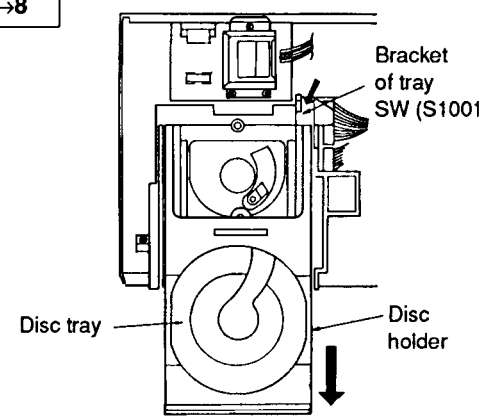


1. Pull out the holder in the direction off arrow ①.
2. Remove the ring in the direction of arrow ②.

Caution: Be sure to handle the small ball carefully.

Ref. No. 8	Removal of the disc holder

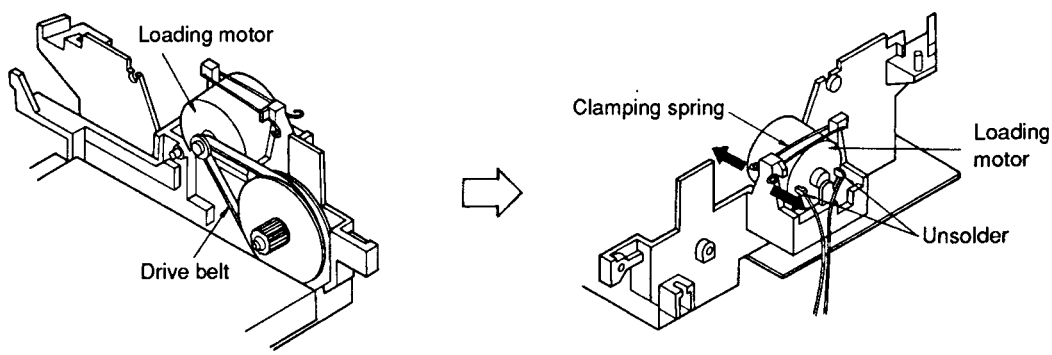
Procedure
1→2→3→8



1. Pull the disc holder slowly in the direction of arrow until the disc tray comes up.
2. Pull the disc holder until it stops.
3. Push the bracket of tray SW (S1001) in the direction of arrow.
4. Pull out the disc holder further to remove it.

Ref. No. 9	Removal of the loading motor

Procedure
1→2→3→8
→9

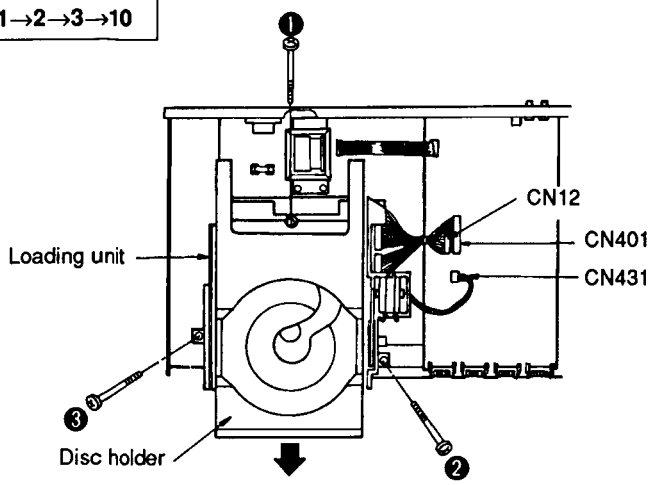


1. Remove the drive belt.

2. Release the clamping spring.
3. Unsolder the 2 terminals of the lead wire of the loading motor.

Ref. No. 10	Removal of the loading unit

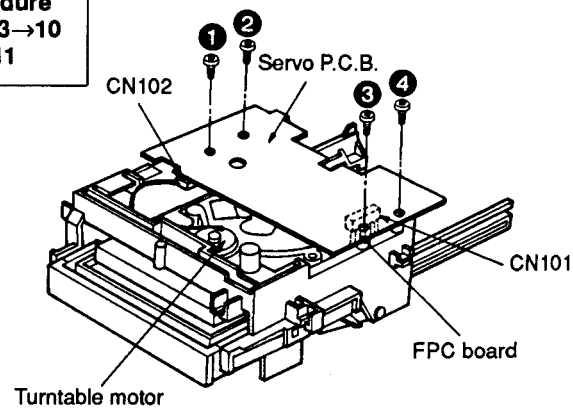
Procedure
1→2→3→10



1. Pull the disc holder slowly in the direction of the arrow until the disc tray comes up.
2. Remove the 3 screws (❶~❸).
3. Remove the 3 connectors (CN12, CN401, CN431).

Ref. No. 11	Removal of the servo P.C.B.

Procedure
1→2→3→10
→11

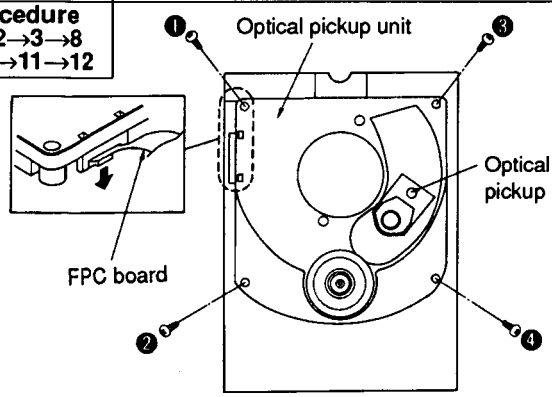


1. Remove the 4 screws (❶~❹) with 2.0mm allen wrench (SZZP1101C).
2. Remove the FPC board (CN101) from the optical pickup.
3. Remove the 1 connector (CN102) of the turntable motor.

Caution: To prevent the breakdown of the laser diode, antistatic shorting pin is inserted into the FPC board.

Ref. No. 12	Removal of the optical pickup unit

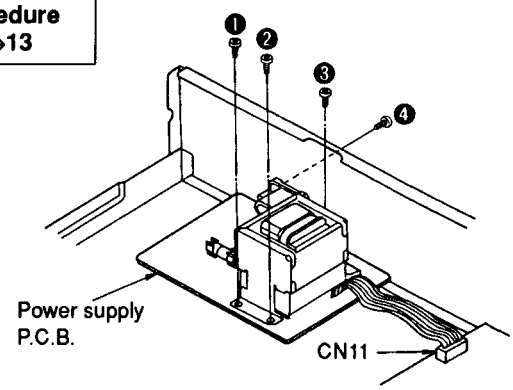
Procedure
1→2→3→8
→10→11→12



1. Remove the 4 screws (❶~❹) with 2.0mm allem wrench (SZZP1101C).
2. Remove the FPC board from the optical pickup.

Ref. No. 13	Removal of the power supply P.C.B.

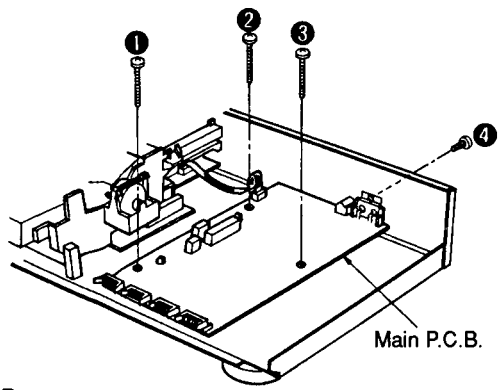
Procedure
1→13



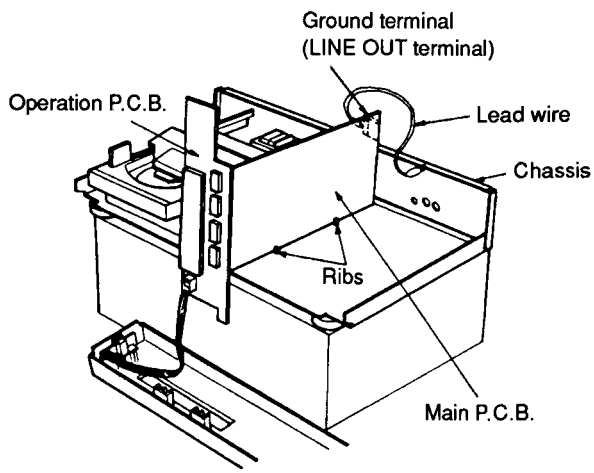
1. Remove the 4 screws (❶~❹).
2. Remove the 1 connector (CN11).

■ CHECKING OF THE MAIN P.C.B.

- When checking the soldered surface of the main P.C.B. and replacing the parts, do as shown below.



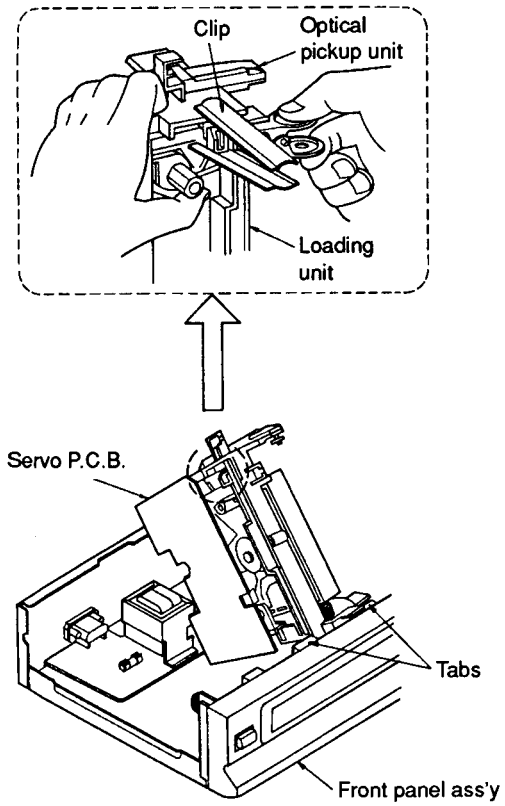
1. Remove the cabinet (see Ref. No. 1 of the disassembly instructions).
2. Remove the front panel ass'y (see Ref. No. 2 of the same).
3. Remove the operation P.C.B. (see Ref. No. 6 of the same).
4. Remove the 4 screws (❶~❹).



5. Reinstall the operation P.C.B. to the main P.C.B.
6. Connect the main P.C.B. ground terminal (LINE OUT terminal) to the chassis with a lead wire.

■ CHECKING OF THE SERVO P.C.B.

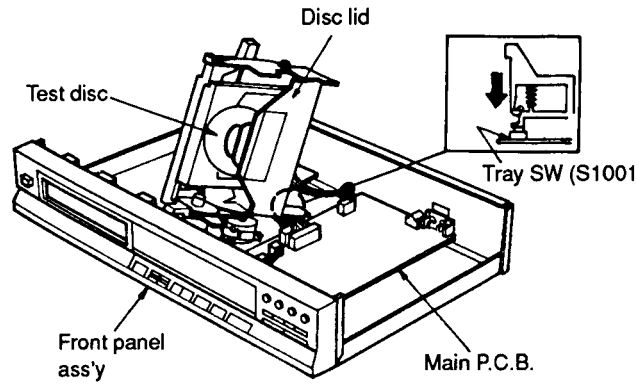
1. Remove the cabinet (see Ref.No. 1 of the disassembly instructions).
2. Remove the disc lid and disc holder (see Ref. No. 3 and No. 8 of the same).
3. Remove the loading unit (see Ref. No. 10 of the same).
4. When checking the soldered surface of the servo P.C.B. and replacing the parts, do as shown below.



(To play a disc)

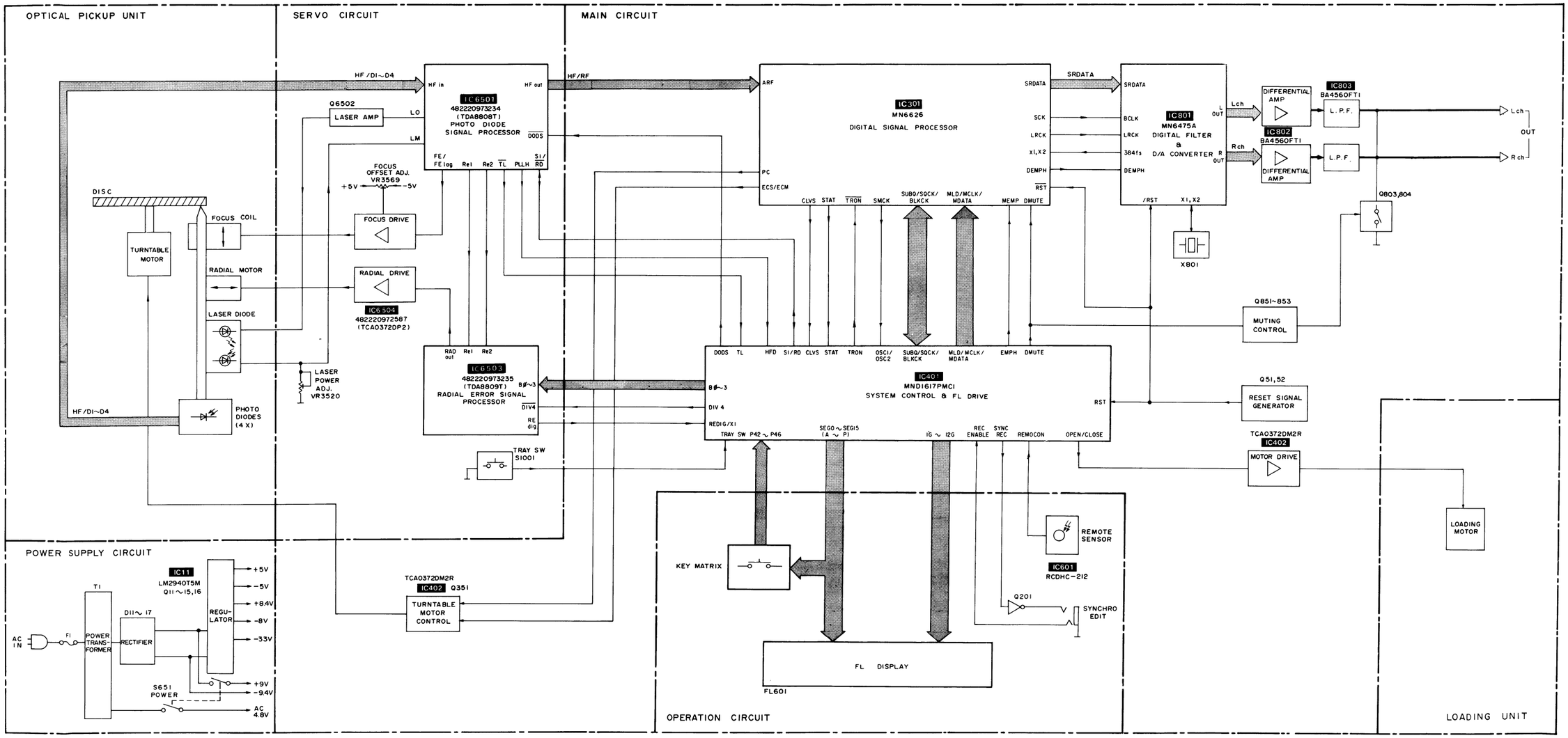
1. Place the test disc.
2. Reinstall the disc lid to the loading unit.
3. Turn "ON" the power switch of the player.
4. Push the bracket of tray SW (S1001) in the direction of the arrow and release it.

Note: If the test disc fails to rotate, press the tray switch again.



Note: Put on the loading unit on the tabs of the front panel ass'y.
(Fixed loading unit)
Hold the loading unit and the optical pickup unit with a clip.
(Fixed optical pickup unit)
Secure the optical pickup assembly with a clip. (Otherwise the clamper will interfere with the disc, restricting turntable rotation.)

■ BLOCK DIAGRAM



■ SCHEMATIC DIAGRAM

(Parts list on pages 35, 36, 41, 42)

(This schematic diagram may be modified at any time with development of new technology.)

Notes:

- **S601~612** : Numeric (>10, 0, 1~10) switches.
  (S601: 0, S602: 1, S603: 2, S604: 3, S605: 4, S606: 5, S607: >10, S608: 10, S609: 9, S610: 8, S611: 7, S612: 6)
- **S613** : Play (► PLAY) switch.
- **S614** : Skip (|◄◄ SKIP) switch.
- **S615** : Search (◄◄) switch.
- **S616** : Program (PROGRAM) switch.
- **S617** : Disc link (DISC LINK) switch.
- **S619** : Stop (■ STOP) switch.
- **S620** : Skip (►►| SKIP) switch.
- **S621** : Search (►►) switch.
- **S622** : Recall (RECALL) switch.
- **S623** : Tape-side select (SIDE A/B) switch.
- **S624** : Random (RANDOM) switch.
- **S625** : Time fade (TIME FADE) switch.
- **S626** : Disc tray open/close (⏏ OPEN/CLOSE) switch.
- **S627** : Pause (❚❚ PAUSE) switch.
- **S628** : Repeat (REPEAT) switch.
- **S629** : Clear (CLEAR) switch.
- **S630** : Edit tape length (TAPE LENGTH) switch.
- **S631** : Time mode select (TIME MODE) switch.
- **S632** : Peak level search (PEAK SEARCH) switch.
- **S635** : Auto cue (AUTO CUE) switch.
- **S651** : Power "**STANDBY** ⏻ **/ON**" (POWER) switch in "**on**" position.
- **S1001** : Tray (OPEN/CLOSE) switch.

- The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis.
  Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.
  *The parenthesized are the values of voltage generated during playing (Test disc 1 kHz, L+R, 0 dB), others are voltage values in stop mode.
- Important safety notice:
  Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
- The supply part number is described alone in the replacement parts list.

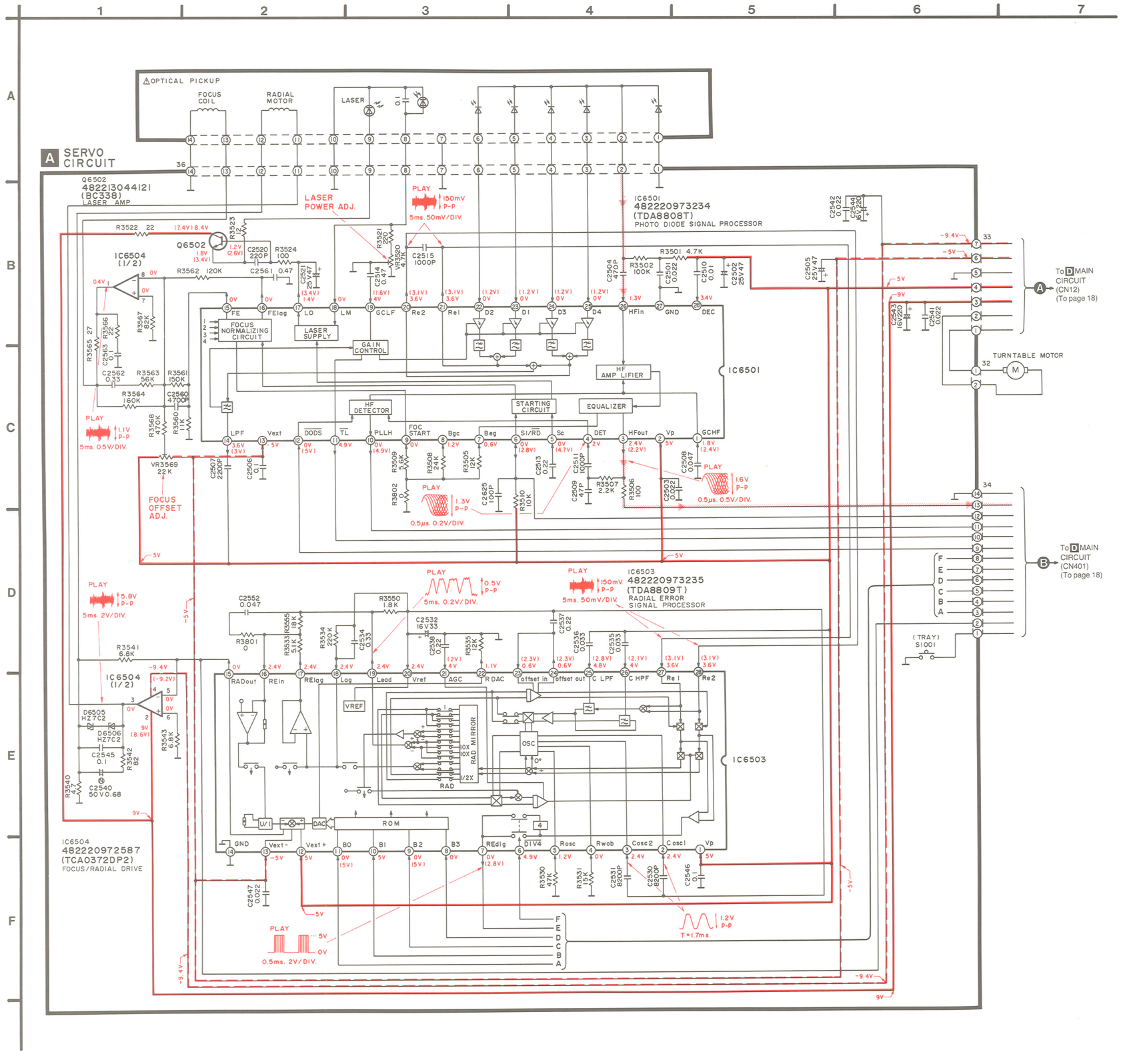
Part No.	Production Part No.	Supply Part No.
IC11	LM2940T5M	LM2940T5
IC802, 803	BA4560FT1	SVIBA4560FT1

- ——— : Positive voltage lines
- - - - - : Negative voltage lines
- ▒▒▒ : Audio signal lines

Caution!

IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.

- Cover the parts boxes made of plastics with aluminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the pins of IC or LSI with fingers directly.



B OPERATION CIRCUIT

FL601 (RSL0148-F)

FL DISPLAY

R601 12

H G F E D C B A

J I H G F E D C B A

G F E D C B A

IC601
RCDHC-212
REMOTE SENSOR

IC601

4.9V 5V

D601 ~ 607
ISS254TA

S603 (2) S602 (1) S605 (4) S604 (3) S601 (0) S607 (>10)

S611 (7) S610 (8) S606 (5) S612 (6) S609 (9) S608 (10)

S630 (TAPE LENGTH) S623 (SIDE A/B) S631 (TIME MODE) S629 (CLEAR) S617 (DISC LINK) S622 (RECALL) S616 (PROGRAM)

S625 (TIME FADE) S615 (SEARCH ◀◀) S624 (RANDOM) S635 (AUTO CUE) S621 (SEARCH ▶▶) S628 (REPEAT) S632 (PEAK SEARCH)

S627 (PAUSE ⏸) S613 (PLAY ▶) S619 (STOP ■) S620 (SKIP ▶▶|) S626 (OPEN/CLOSE ⏏) S614 (SKIP |◀◀)

C POWER SWITCH CIRCUIT

FC651

C652 1000P

C651 1000P

S651 (POWER)

standby ⟷ on

9V

CN611

CN612

CN613

CN614

D MAIN CIRCUIT

IC402
TCA0372DM2R
MOTOR DRIVE

R436 220K

IC402 (1/2)

R435 100K

R432 22K

R431 22K

R433 100K

R434 220K

R438 22K

R437 22K

CN431

LOADING MOTOR

CN412

To A SERVO CIRCUIT (To page 16)

IC402 (1/2)

R351 10K

R355 33K

R356 33K

C351 1000P

R357 4W6.8

R354 100K

R353 12K

R352 100K

C406 120P

CN401

To A SERVO CIRCUIT (To page 16)

CN411

CN412

CN413

CN414

Q351
DTA124ESTP
MOTOR CONTROL

Q351

IC401
MN1617PMC1
SYSTEM CONTROL & FL DRIVE

C402 6.3V47

C401 0.1

R401 100K

Q201
DTC124ESTP
SWITCHING (SYNCHRO REC)

Q201

F=4.2336MHz

T=3.3ms.

T=3.3ms.

IC301
MN6626
DIGITAL SIGNAL PROCESSOR

C304 0.1

C309 0.1

C305 0.01

C306 0.022

C307 0.47

C308 1000P

R302 82K

R303 100K

R305 470

C405 6.3V47

IC301

PLAY 1.5V p-p 0.5μs. 0.5V/DIV.

PLAY 5V 0V 0.5μs. 2V/DIV.

PLAY T=0.36μs.

PLAY F=75Hz

PLAY F=7.3kHz

2ms. 2V/DIV.

C301 0.01

R301 1.8K

C302 27P

C303 0.1

R412 4.7K

R411 4.7K

C312 0.01

R834 1K

L832 4.7μH

R840 180

C844 27P

R315 100K

R861 1K

2.8V p-p

F 16.9344MHz

F 4.2336MHz

PLAY T=27ms.

C404 0.1

X801 (33

C831 6.3V330

C833 0.1

C838 56P

C840 56P

R833 4.7K

C841 6.3V100

C842 0.1

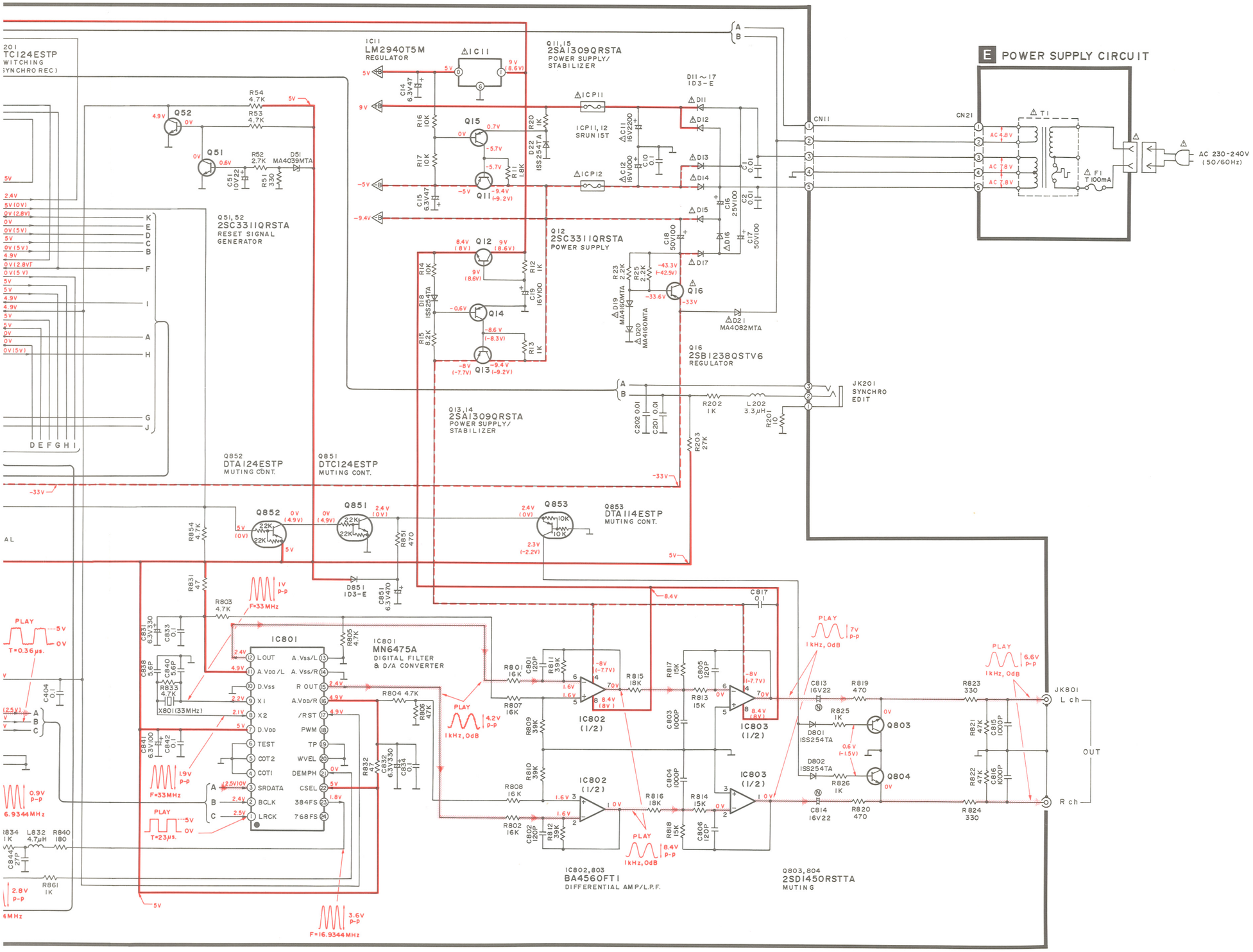
L9 μH

F=33MHz

PLAY T=23μs.

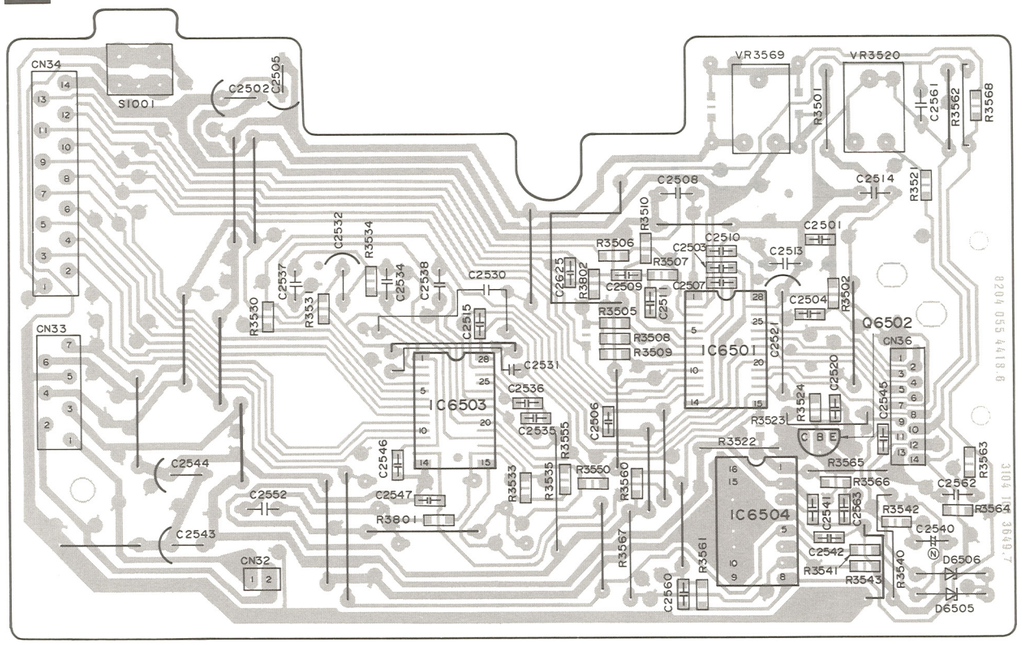
0.9V p-p F=16.9344MHz

10 11 12 13 14 15 16 17 18 19

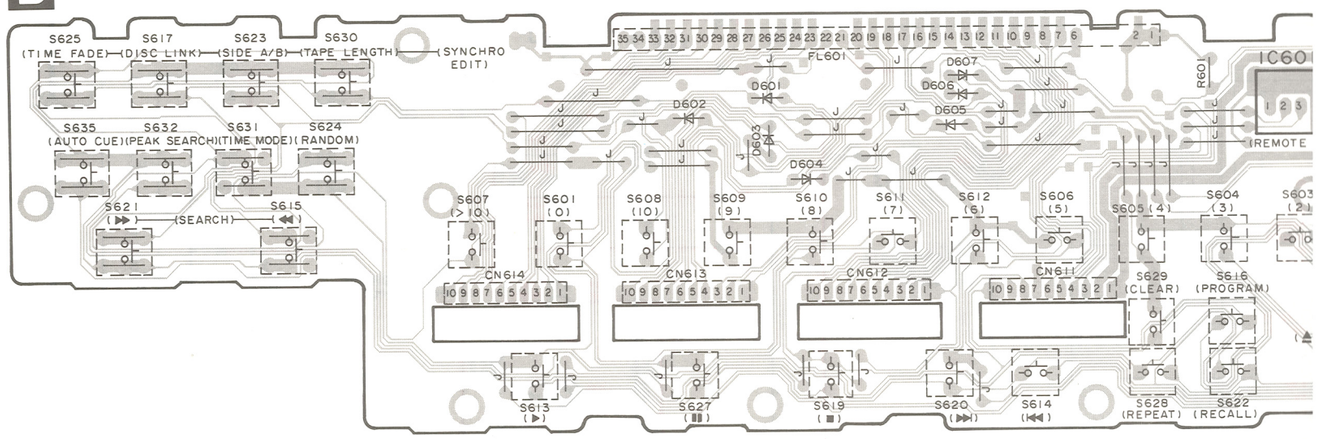


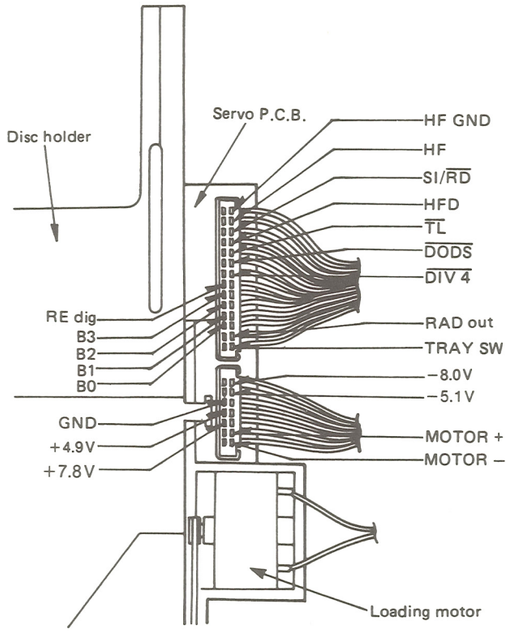
■ PRINTED CIRCUIT BOARD DIAGRAM

A SERVO P.C.B. (310 411 802 431)



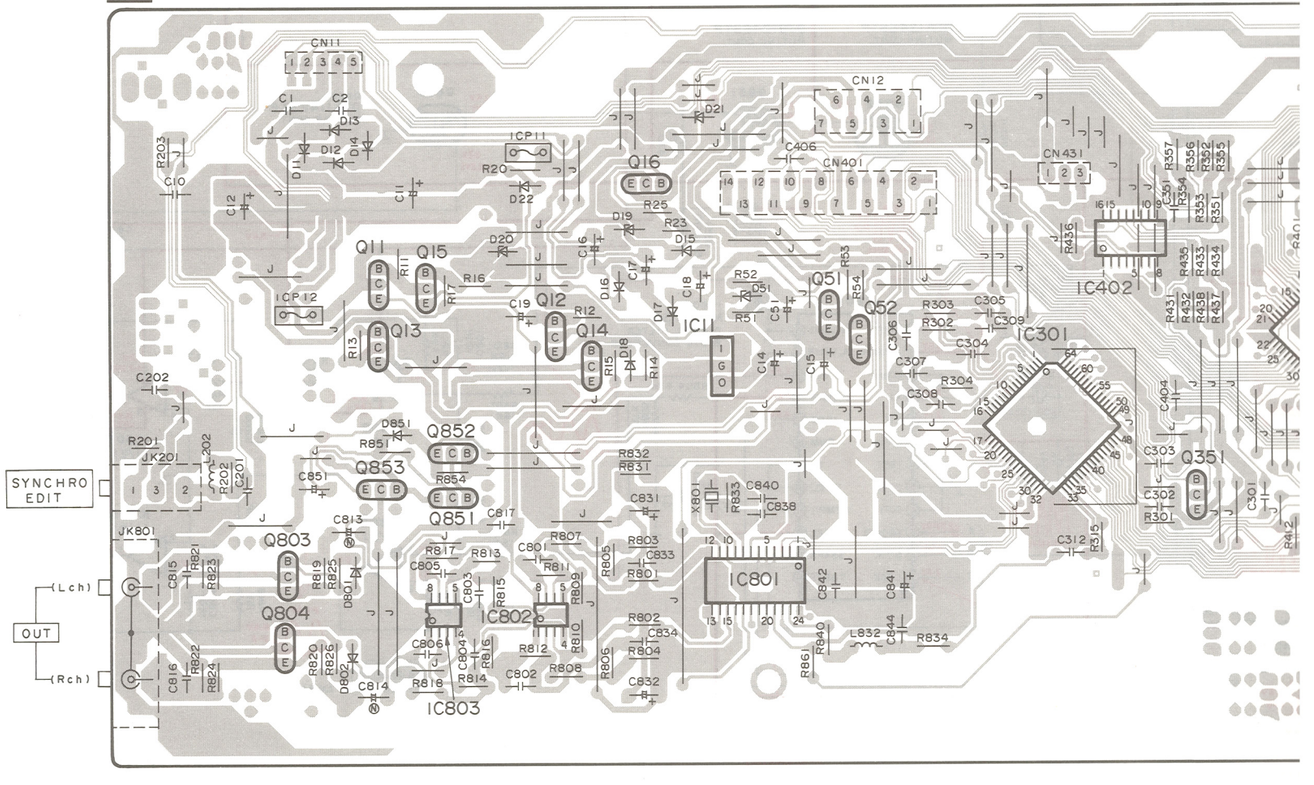
B OPERATION P.C.B. (REPI540B-S)



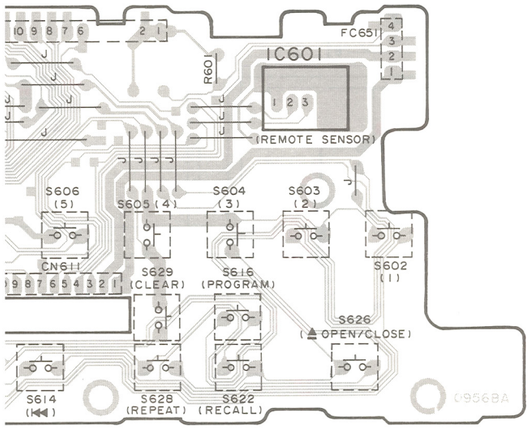


Note: Use connector pins to check servo circuit voltages and waveforms.

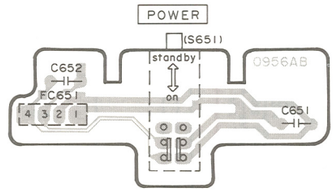
D MAIN P.C.B. (REPI533A-M)

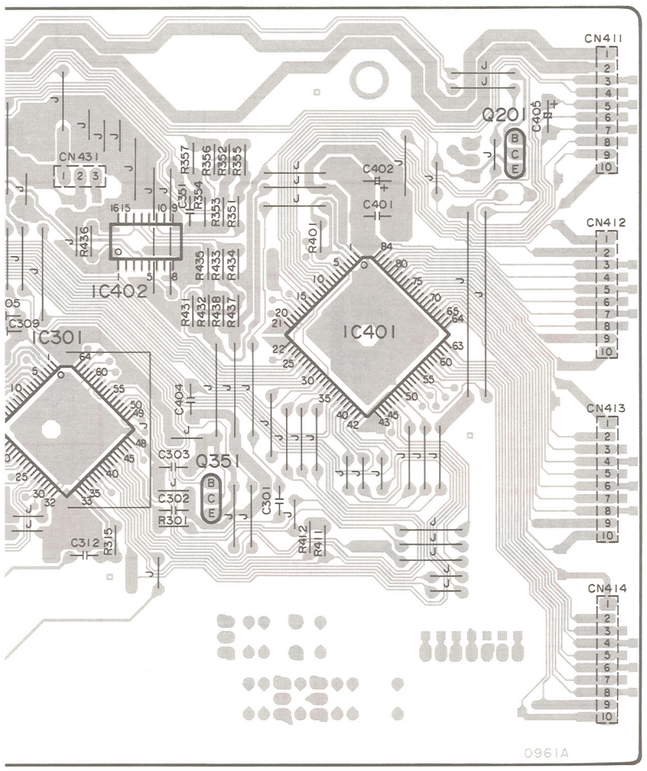


10 11 12 13 14 15 16 17 18 19



C POWER SWITCH P.C.B. (REPI540B-S)

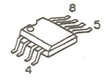


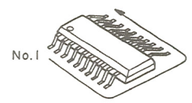


- 23 -

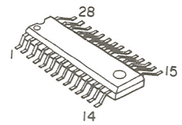
•Terminal guide of IC's, transistors and diodes

BA4560FT1



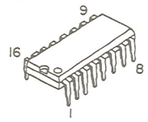


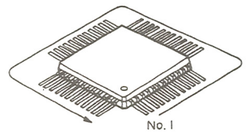
TCA0372DM2R	16 Pin
MN6475A	24 Pin



482220973234 (TDA8808T)
482220973235 (TDA8809T)

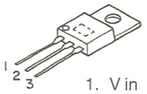
482220972587 (TCA0372DP2)





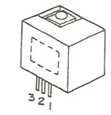
MN6626	64 Pin
MND1617PMC1	84 Pin

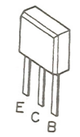
LM2940T5M



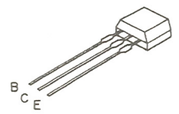
1. V in
2. GND
3. V out

RCDHC-212



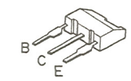


2SA1309QRSTA
2SC3311QRSTA
2SD1450RSTTA

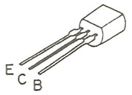


DTA114ESTP
DTA124ESTP
DTC124ESTP

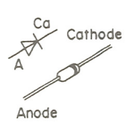
2SB1238QSTV6



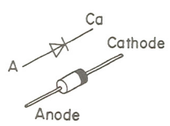
482213044121 (BC338)



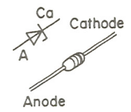
1SS254TA

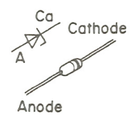


1D3-E



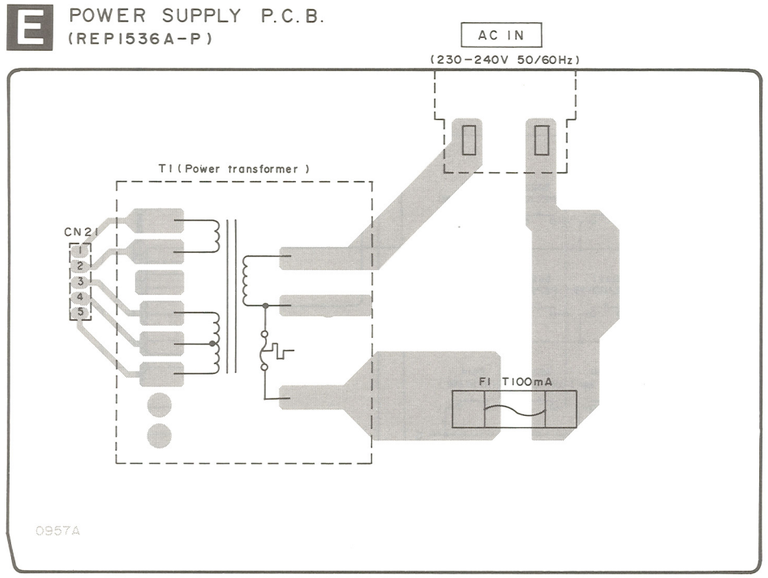
MA4039MTA
MA4082MTA





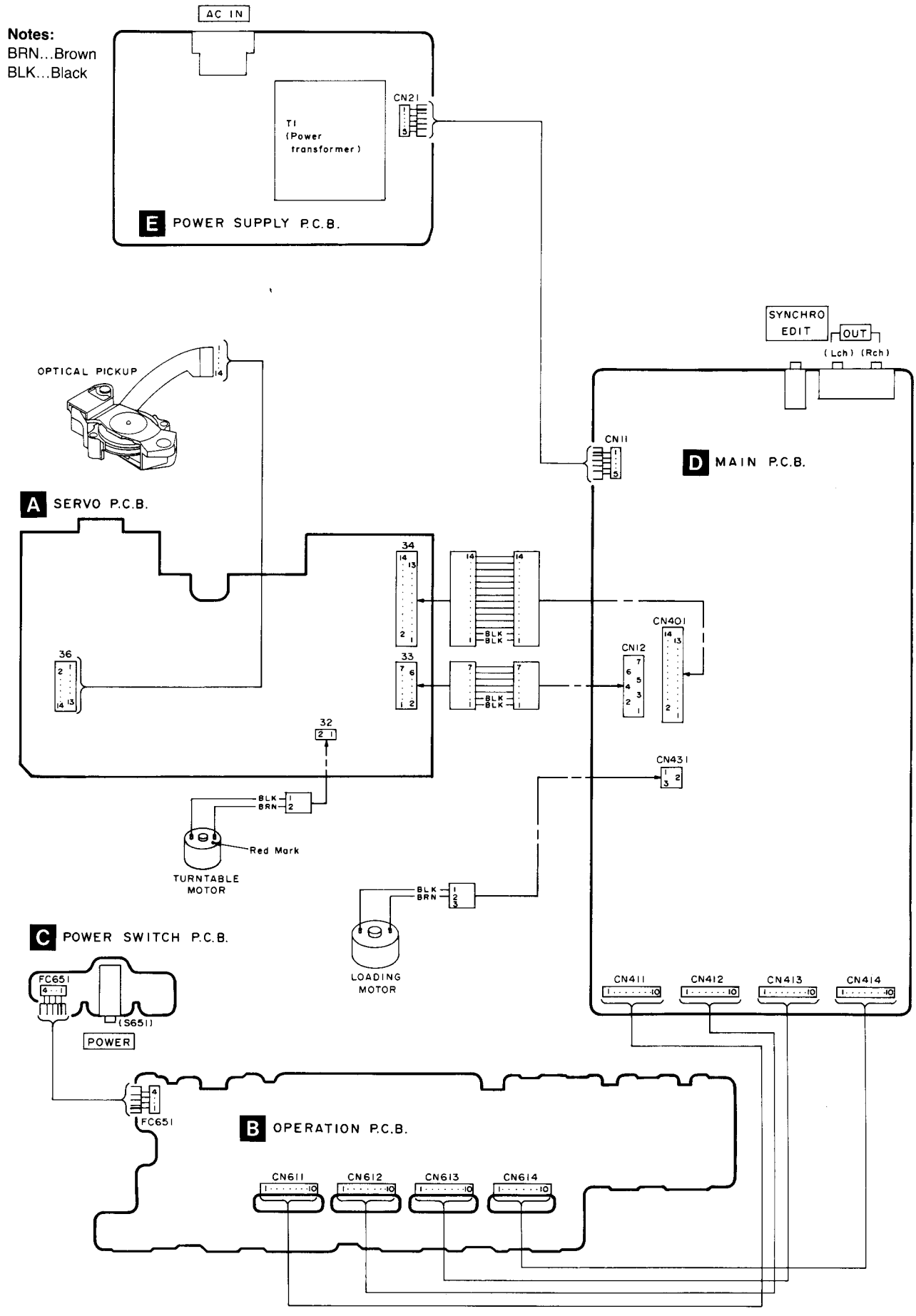
MA4160MTA
482213081101 (HZ7C2)

E POWER SUPPLY P.C.B. (REPI536A-P)



- 24 -

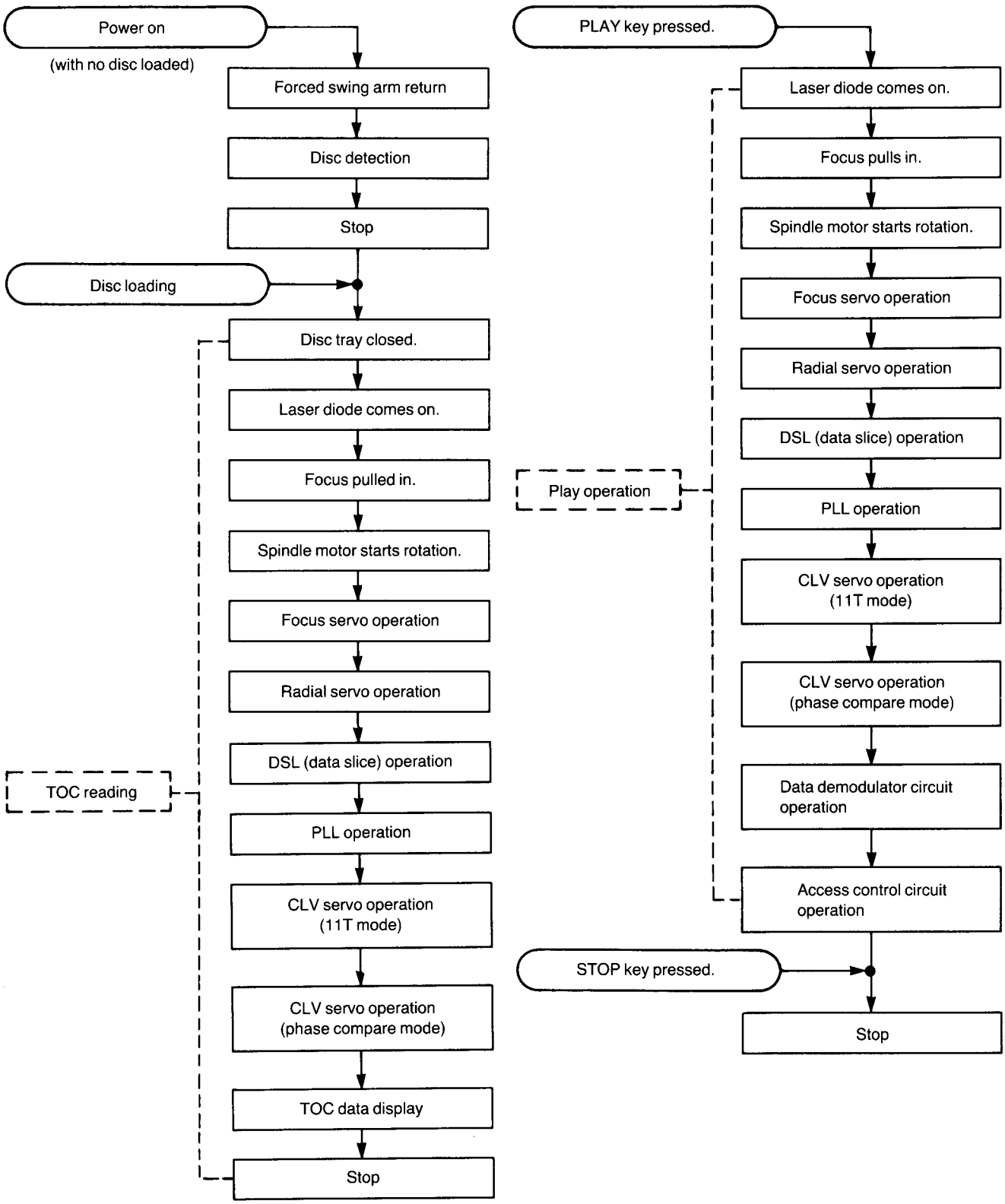
■ WIRING CONNECTION DIAGRAM



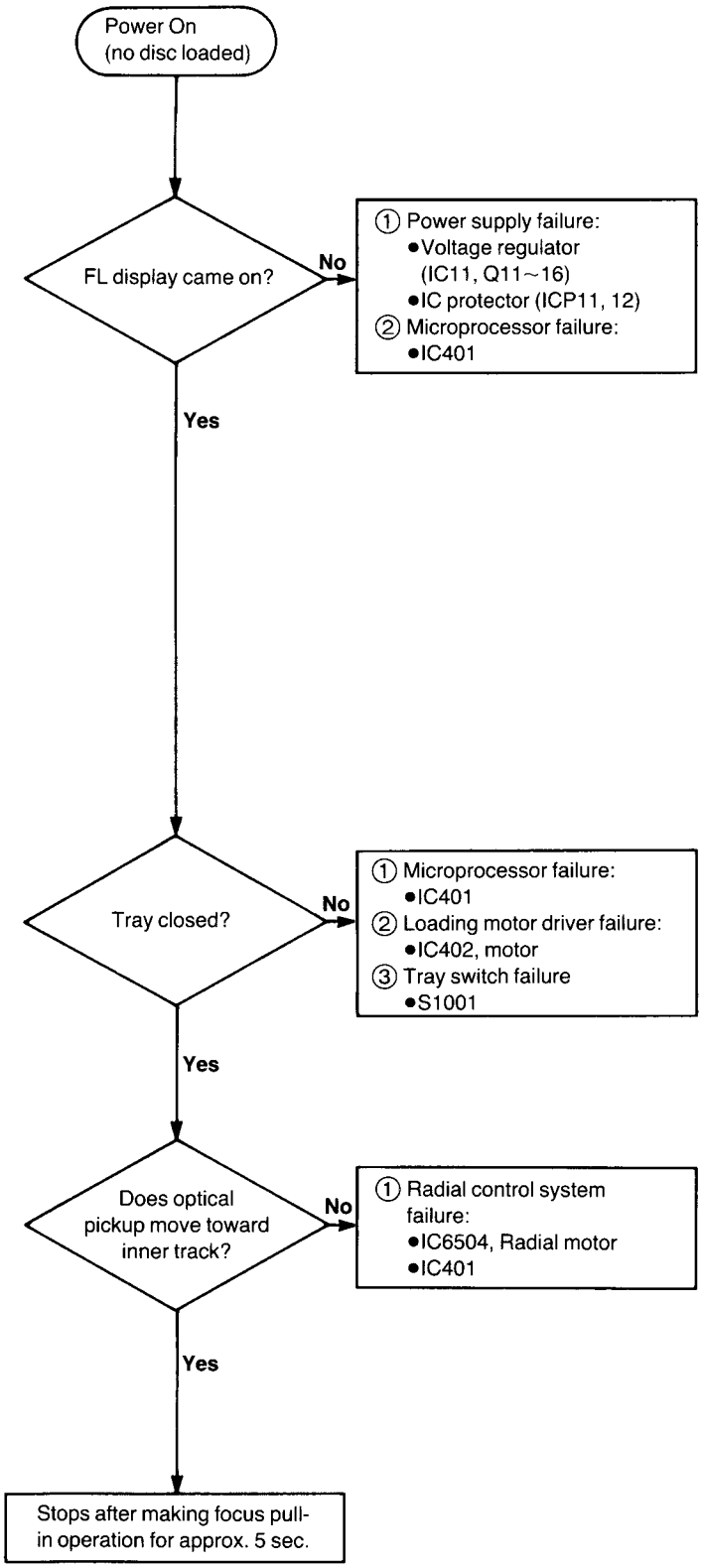
■ TROUBLESHOOTING GUIDE

SL-PG340A Operation Sequence Check Sheet

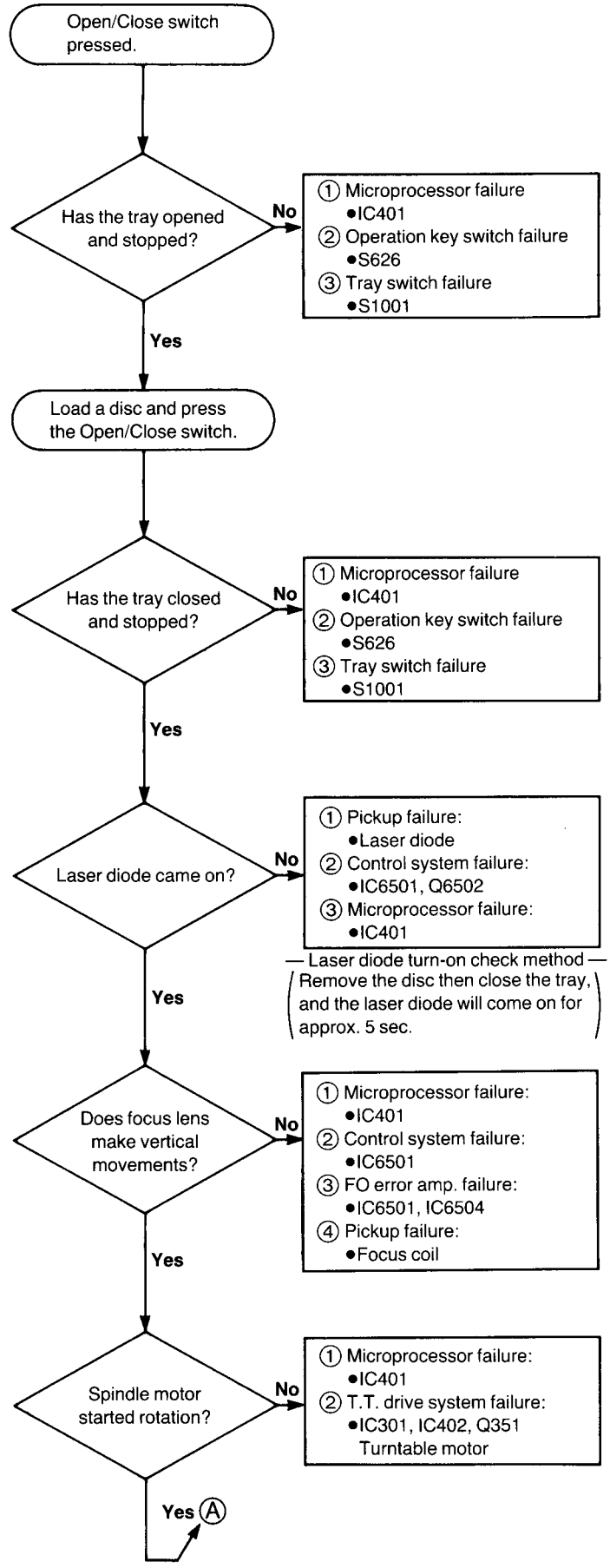
Play Operation Sequence

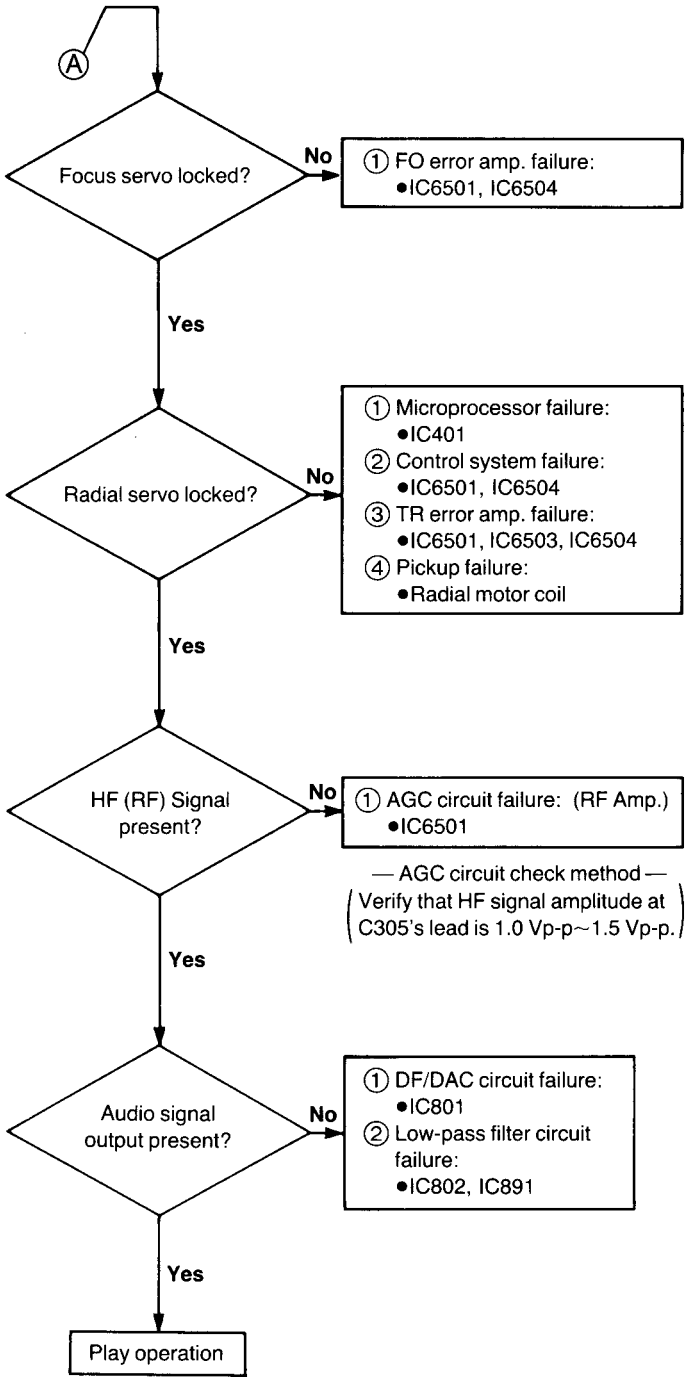


(Operation Sequence Just After Power On)



(TOC Read Operation-PLAY Operation)

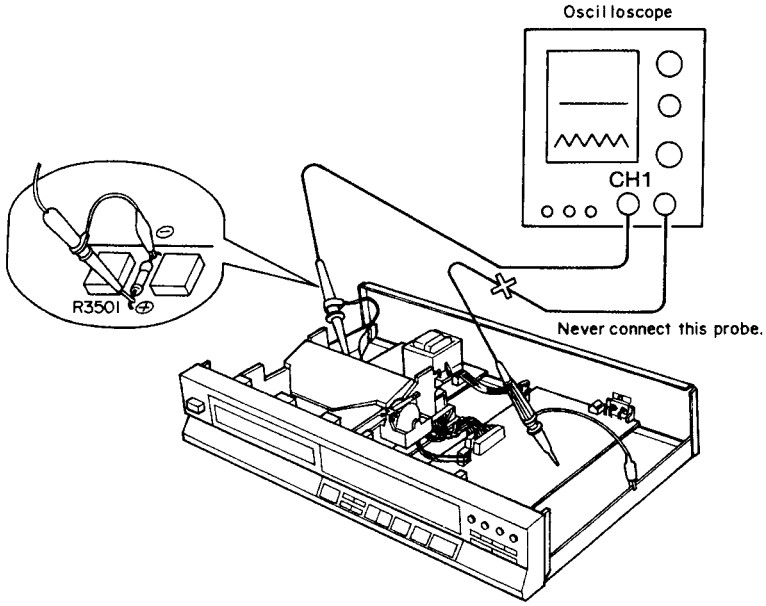



Ⓐ
Focus servo locked?
No
① FO error amp. failure:
●IC6501, IC6504
Yes
Radial servo locked?
No
① Microprocessor failure:
●IC401
② Control system failure:
●IC6501, IC6504
③ TR error amp. failure:
●IC6501, IC6503, IC6504
④ Pickup failure:
●Radial motor coil
Yes
HF (RF) Signal present?
No
① AGC circuit failure: (RF Amp.)
●IC6501
— AGC circuit check method —
Verify that HF signal amplitude at C305's lead is 1.0 Vp-p~1.5 Vp-p.
Yes
Audio signal output present?
No
① DF/DAC circuit failure:
●IC801
② Low-pass filter circuit failure:
●IC802, IC891
Yes
Play operation

■ MEASUREMENTS AND ADJUSTMENTS

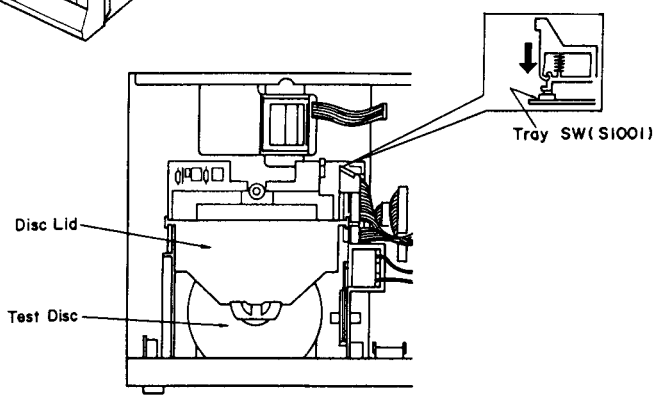
Caution:

1. It is very dangerous to look at or touch the laser beam. (Laser radiation is invisible.)
   With the unit turned "on", laser radiation is emitted from the pickup lens.
   Avoid exposure to the laser beam, especially when performing adjustments.
2. During laser power or focus offset adjustment, never connect the other probe to the unit.
   (Otherwise the unit's power supply will sustain damage.)



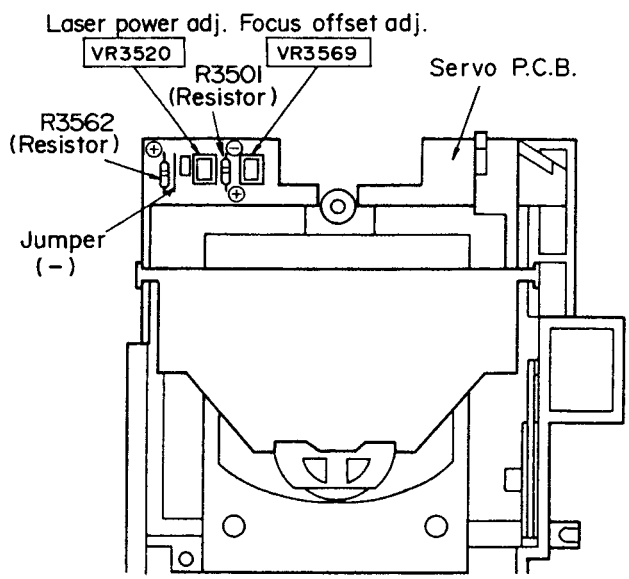
PREPARATION

1. Remove the cabinet (see Ref No. 1 of the disassembly instructions).
2. Remove the disc holder (see Ref No. 9 of the same).
3. Place the test disc on the turntable.
4. Turn "ON" the power switch at the player.
5. Push the bracket of tray SW (S1001) in the direction of the arrow and release it.
   Note: If the test disc fails to rotate, press the tray switch again.



ADJUSTMENT POINTS

• **Servo P.C.B.**



Measuring Instruments

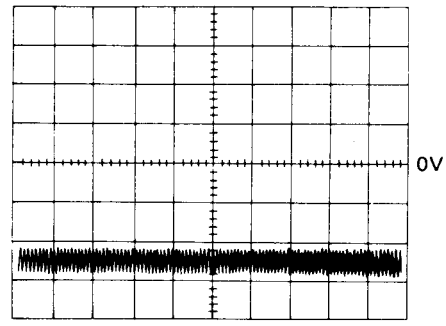
* Playability test disc (SZZP1054C).
* Normal disc (Ordinary musical program disc).
* Dual-beam oscilloscope with bandwidth of 30MHz or better (with EXT trigger and 1: 1 probe).

(1) LASER POWER ADJUSTMENT

1. Connect the oscilloscope's CH1 probe across (+) and (−) of **R3501** (Resistor) on the servo P.C.B.
2. Switch the player power ON, and play track No. 1 on the test disc (SZZP1054C).
3. Adjust **VR3520** so that the voltage is **−50±2mV**.

Oscilloscope setting:

VOLT 20mV
SWEEP.....0.2msec.
INPUT.....DC

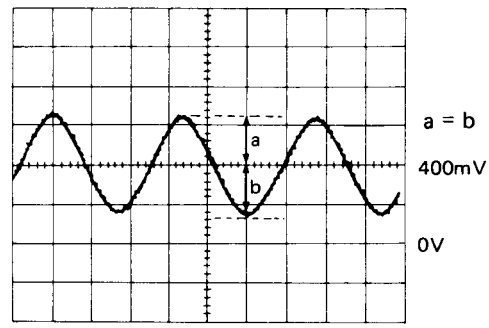


(2) FOCUS OFFSET ADJUSTMENT

1. Connect the oscilloscope's CH1 probe across **R3562** (Resistor) (+) and **Jumper** (−) on the servo P.C.B.
2. Switch the player power ON, and play track No. 1 on the test disc (SZZP1054C).
3. Adjust **VR3569** until the signal amplitude become in the center of **400mV**.

Oscilloscope setting:

VOLT 200mV
SWEEP.....5msec.
INPUT.....DC



(3) CHECK OF PLAY OPERATION AFTER ADJUSTMENT

*** Checking Skip Search**

1. Play an ordinary musical program disc.
2. Press the skip button to check for normal skip search operation (in both the forward and reverse directions).

*** Checking Manual Search**

1. Play an ordinary musical program disc.
2. Press the manual search button to check for smooth manual search operations at either low or high speed (in both the forward and reverse directions).

*** Playability check by test disc**

1. Play the 0.7mm black dot and the 0.7mm wedge on the playability test disc (SZZP1054C) and verify that no sound skip or noise occurs.

■ TERMINAL FUNCTION OF IC'S

•IC6501 (482220973234/TDA8808T): Photo diode signal processor

Pin No.	Mark	I/O Division	Function
1	GCHF	I	Gain control input of HF amplifier. Current output from HF amplitude detector
2	Vp	I	Positive supply voltage
3	HFout	O	HF amplifier and equalizer voltage output
4	DET	I	HF detector voltage input
5	Sc	I	Starting up capacitor input
6	Si/$\overline{RD}$	I/O	On/off control (start input); ready signal output (starting up procedure successful)
7	Beg	I	Equalizer reference current input
8	Bgc	I	DC and LF gain control reference current input
9	FOC START	I	Focus normalizing circuit starting current
10	PLLH	O	PLL on hold output
11	$\overline{TL}$	O	Track loss output
12	$\overline{DODS}$	I	Drop out detector suppression input
13	Vext	I	Negative supply connection for FE and FElag output stage; also substrate connection
14	LPF	O	Low pass filter for Iret, used in track loss ($\overline{TL}$) detector and LF gain control

Pin No.	Mark	I/O Division	Function
15	FE	O	Current output of normalized, switched focus error signal
16	FElag	O	Current output of switched focus error signal, intended for lag network
17	LO	O	Laser amplifier current output
18	LM	I	Laser monitor diode input
19	GCLF	I	Gain control input for AC and LF amplifiers. Current output from LF amplitude detector
20	Re2	O	Summation of amplified currents from D3 and D4
21	Re1	O	Summation of amplified currents from D1 and D2
22, 23	D1, D2	I	Current inputs to DC and LF photo diode amplifier
24, 25	D3, D4	I	Current inputs to DC and LF photo diode amplifier
26	HFin	I	Current input to HF amplifier
27	GND	—	Ground connection of device
28	DEC	I	Decoupling input (internal bypass)

• IC6503 (482220973235/TDA8809T): Radial error signal processor

Pin No.	Mark	I/O Division	Function
1	Vp	I	Positive supply voltage
2	Cosc1	I	Frequency setting capacitors for oscillator
3	Cosc2		
4	Rwob	I	Wobble generator input
5	Rosc	I	Biassing resistor for oscillator frequency and internal amplitude
6	$\overline{DIV4}$	I	Radial error digital signal devided by four
7	REdig	O	Digital output of sign (Re2−Re1)
8	B3	I	Input control bits for off-, catch-, play-status and DAC output current
9	B2		
10	B1		
11	B0		
12	Vext (+)	I	Positive external voltage input
13	Vext (−)	I	Negative external voltage input (also substrate connection)
14	GND	—	GND terminal
15	RADout	O	Current output of amplified (Re2−Re1) input currents
16	REin	I	Radial error input
17	RElag	O	Voltage output of integrated (Re2−Re1) input currents

Pin No.	Mark	I/O Division	Function
18	Lag	I	Connection of integrator capacitor for (Re1−Re2) input currents
19	Lead	O	Lead output
20	Vref	I	Internal reference voltage output
21	AGC	I	Gain control input for radial error signal
22	RDAC	O	Biassing resistor for current output for track jumping ($3^1/_2$ bits)
23	offset in	I	Offset control input for radial offset
24	offset off	O	Offset control output for radial offset
25	CLPF	I	Low-pass filter for Re1 and Re2, used for radial offset control
26	CHPF	I	High-pass filter for Re1 and Re2, used for radial offset control
27	Re1	I	Input for amplified currents from photo diodes D1 and D2
28	Re2	I	Input for amplified currents from photo diodes D3 and D4

• IC301 (MN6626): Digital signal processor

Pin No.	Mark	I/O Division	Function
1	AVSS	—	GND terminal
2	IREF	I	Reference current input
3	ARF	I	RF signal input
4	DRF	I	DSL bias terminal (Not used, open)
5	DSLF	I/O	DSL loop filter terminal
6	PLLF	I/O	PLL loop filter terminal
7	AVDD	I	Power supply terminal
8	RSEL	I	RF signal polarity setting terminal (Not used, connected to VDD)
9 ∫ 16	TBUS7 ∫ TBUS0	O	Test terminal
17	FLAG	O	Flag terminal
18	IPFLAG	O	Interpolation flag terminal
19	FCLK	O	Crystal frame clock (Not used, open)
20	BYTCK	O	Byte clock (Not used, open)
21	WDCK	O	Word clock (Not used, open)
22	$\overline{RST}$	I	Reset terminal
23	TX	O	Digital audio signal (Not used, open)
24	LDG	O	Lch deglitch signal (Not used, open)
25	RDG	O	Rch deglitch signal (Not used, open)
26	SRDATA	O	Serial data output (MSB first)
27	SCK	O	Serial bit clock output
28	LRCK	O	L/R discriminating signal
29	XCK	O	Crystal OSC terminal (f=16.9344MHz) (Not used, open)
30	PMCK	O	Frequency division clock signal (Not used, open) ($f=\frac{1}{192}\times CK=88.2kHz$)
31	CSEL	I	Test terminal (Connected to GND)
32	PSEL		
33	X1	I	Crystal OSC terminal (f=16.9344MHz)
34	X2	O	
35	VSS	—	GND terminal
36	SUBQ	O	Sub-code Q data
37	SQCK	I	Sub-code Q register clock
38	$\overline{CLDCK}$	O	Sub-code frame clock (f=7.35kHz) (Not used, open)

Pin No.	Mark	I/O Division	Function
39	BLKCK	O	Sub-code block clock (f=75Hz)
40	DEMPH	O	De-emphasis ON signal ("H": ON)
41	MEMP	I	Emphasis signal
42	MLD	I	Command load signal ("L": LOAD)
43	MCLK	I	Command clock signal
44	MDATA	I	Command data signal
45	D MUTE	I	Muting input ("H": MUTE)
46	SMCK	O	System clock (f=4.2336MHz)
47	STAT	O	Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQOK)
48	CRC	O	Sub-code CRC check terminal ("H": OK, "L": NG) (Not used, open)
49	SUBC	O	Sub-code serial output data (Not used, open)
50	SBCK	I	Sub-code serial output clock (Not used, open)
51	$\overline{TRON}$	I	Tracking servo ON signal ("L": ON)
52	CLVS	O	Turntable servo phase synchro signal ("H": CLV, "L": Rough servo)
53	PC	O	Turntable motor ON signal ("L": ON)
54	ECM	O	Turntable motor drive signal (Forced mode)
55	ECS	O	Turntable motor drive signal (Servo error signal)
56	VDD	I	Power supply terminal
57	$\overline{TEST}$	I	Test terminal (Normal : "H")
58	SSEL	I	"SUBQ" terminal mode select ("H": Q code buffer)
59	MSEL	I	"SMCK" terminal frequency select ("L": SMCK=4.2336MHz) (Not used, connected to GND)
60	RESY	O	Re-synchronizing signal of frame sync. (Not used, open)
61	DO	I	Drop-out detection signal ("H": Drop-out) (Not used, connected to GND)
62	EFM	O	EFM signal (Not used, open)
63	PCK	O	PLL extract clock (f=4.3218MHz) (Not used, open)
64	PDO	O	Phase comparated signal of EFM and PCK (Not used, open)

•IC401 (MN01617PMC2): System control & FL drive

Pin No.	Mark	I/O Division	Function
1	VDD	I	Power supply terminal
2	OSC2	I	System clock input (f=4.2336MHz)
3	OSC1		
4	VSS	—	GND terminal
5	XI	I	Radial error digital signal
6	XO	O	Not Used, open
7	P47	I	
8 ∫ 12	P46 ∫ P42	I	Key return signal
13	SYNC REC	O	Synchro rec control
14	REC ENABLE	I	
15 ∫ 18	P37 ∫ P34	—	Not used, open and connected to terminal
19	P33	—	Not used, open and connected to terminal
20	P32		
21	P31		
22	P30		
23	P27		
24	OPEN/ CLOSE	O	Loading motor control signal
25	DMUTE	O	Muting output ("H": MUTE)
26	SI/RD	I/O	On/off control and ready signal
27 ∫ 30	B3 ∫ B0	O	Control bits for off-, catch-, play-status and DAC output current
31	REMOCON	I	Remote control signal
32	REDIG	I	Radial error digital signal
33	MDATA	O	Command data signal
34	MCLK	O	Command clock signal
35	MLD	O	Command load signal ("L": LOAD)

Pin No.	Mark	I/O Division	Function
36	TL	I	Track loss input
37	RST	I	Reset terminal
38	SQCK	O	Sub-code Q register clock
39	SUBQ	I	Sub-code Q data
40	TRAY SW	I	Disc holder open/close det. terminal
41	BLKCK	I	Sub-code block clock (f=75Hz)
42	DODS	O	Drop-out detect signal
43	STAT	I	Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQOK)
44	P95	—	Not used, open
45	CLVS	I	Spindle servo phase synchro signal ("H": CLV, "L": Rough servo)
46	TRON	O	Tracking servo ON signal ("L": ON)
47	DIV4	O	Radial error digital signal devided by four
48	EMPH	O	Emphasis signal
49	HFD	I	PLL on hold input
50	CM	—	Not used, connected to GND
51	130Hz	—	Not used, open
52	VPP	I	Power supply terminal for FL drive
53 ∫ 56	16G ∫ 13G	—	Not used, open
57 ∫ 68	12G ∫ 1G	O	FL digit signal
69 ∫ 84	A/SEGO ∫ P/SEGP	O	FL segment signal and key scan signal

• IC801 (MN6475A): Digital filter & D/A converter

Pin No.	Mark	I/O Division	Function
1	LRCK	I	L/R discriminating signal
2	BCLK	I	Serial bit clock input
3	SRTATA	I	Serial data output (MSB first)
4	COT 1	I	Test terminal (Ordinary: L)
5	COT 2		
6	TEST		
7	D. V_{DD}	I	Digital power supply terminal
8	X2	O	Clock terminal (f=33.8688 MHz)
9	X1	I	
10	D. V_{SS}	—	Digital GND terminal
11	AV_{DD}/L	I	Analog power supply terminal (1)
12	L OUT	O	Analog signal output (1)

Pin No.	Mark	I/O Division	Function
13	AV_{SS}/L	—	Analog GND terminal
14	AV_{SS}/R		
15	R OUT	O	Analog signal output (2)
16	AV_{DD}/R	I	Analog power supply terminal (2)
17	/RST	I	Reset signal input (Active: L)
18	PWM	O	PWM output (TP···"H": output, "L": High impedance) (Not used, open)
19	TP	I	Test terminal (ordinary: L) (Not used, connected to GND)
20	WVEL	I	Double velocity ("H": double, "L": single) (Not used, connected to GND)
21	DEMPH	I	Digital de-emphasis ON/OFF ("H": ON)
22	CSEL	I	Clock frequency select of 384 FS terminal
23	384FS	O	384 fs (16.9344 MHz) signal output
24	768FS	O	768 fs (33.8688 MHz) signal output (Not used, open)

■ REPLACEMENT PARTS LIST

Notes: *Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
*The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indications can be used for all areas.
*[MB] Indicates in Remarks columns parts that are supplied by MBV.
*Warning: This product uses a laser diode. Refer to caution statements on page 2.
*ACHTUNG: Die lasereinheit nicht zerlegen.
Die lasereinheit darf nur gegen einc vom hersteller spezifizierte einheit ausgetauscht werden.

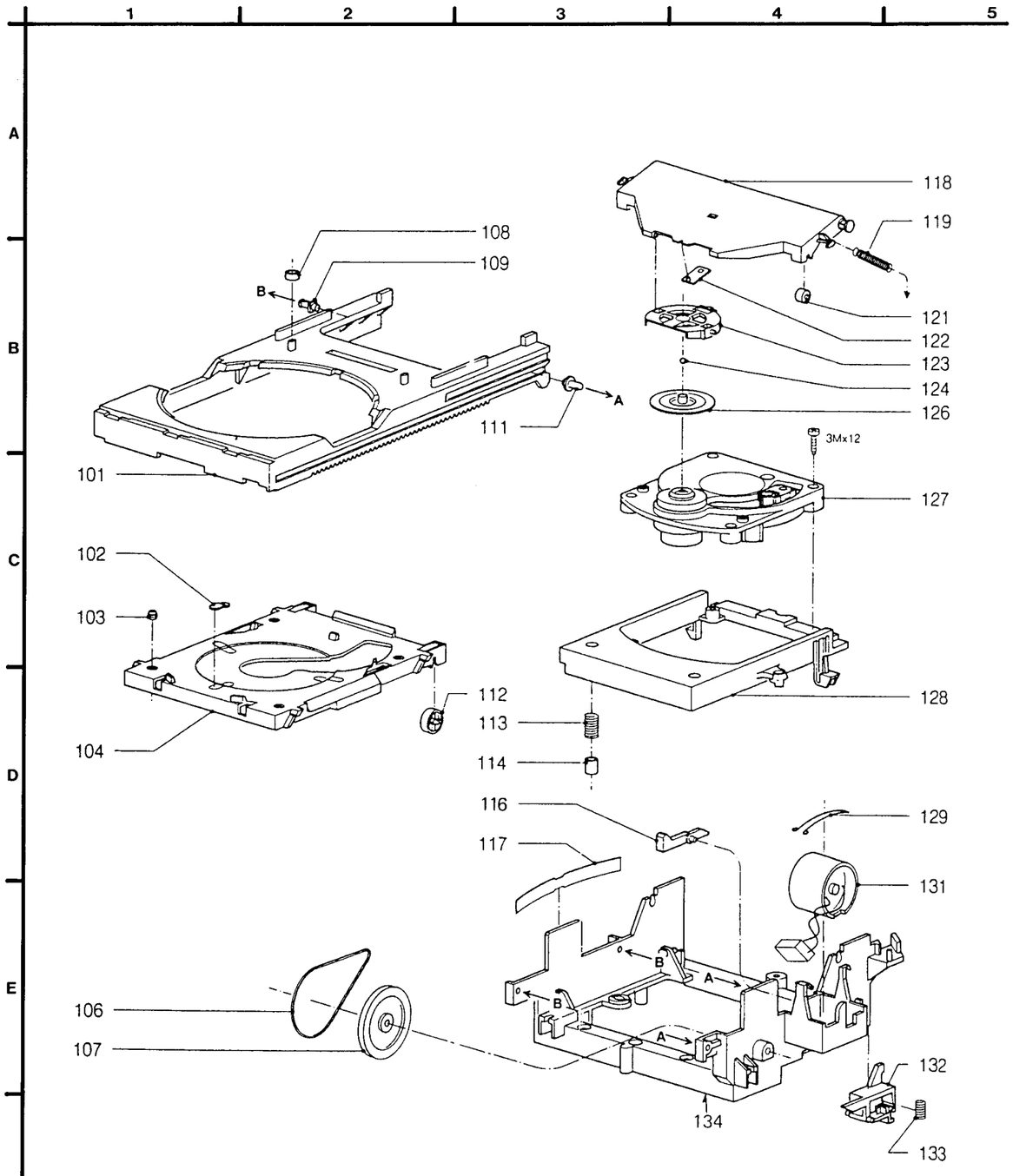
Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)	
IC11	LM2940T5	I. C, REGULATOR	⚠
IC301	MN6626	I. C, D. SIGNAL PROCESSOR	
IC401	MND1617PMC2	I. C, SYS CONTROL & FL DRIVE	[MB]
IC402	TCA0372DM2R	I. C, MOTOR DRIVE	
IC601	RCDHC-212	I. C, REMOTE CONTROL RECEIVER	[MB]
IC801	MN6475A	I. C, FILTER & D/A CONV.	
IC802, 803	SVIBA4560FT1	I. C, DIFFERENTIAL/L. P. FILTER	
		IC PROTECTOR(S)	
ICP11, 12	SRUN15	I. C, RPOTECTOR	⚠
		TRANSISTOR(S)	
Q11	2SA1309A-R	TRANSISTOR	
Q12	2SC3311A-Q	TRANSISTOR	
Q13, 14	2SA1309A-R	TRANSISTOR	
Q15	2SA1309A-R	TRANSISTOR	
Q16	2SB1238QSTV6	TRANSISTOR	⚠
Q51, 52	2SC3311A-Q	TRANSISTOR	
Q201	DTC124EST	TRANSISTOR	
Q351	DTA124ESTP	TRANSISTOR	
Q803, 804	2SD1450RTA	TRANSISTOR	
Q851	DTC124EST	TRANSISTOR	
Q852	DTA124ESTP	TRANSISTOR	
Q853	DTA114ESTP	TRANSISTOR	
		DIODE(S)	
D11-17	1D3-E	DIODE	⚠[MB]
D18	1SS254TA	DIODE	
D19, 20	MA4160M	DIODE	⚠
D21	MA4082MTA	DIODE	⚠
D22	1SS254TA	DIODE	
D51	MA4039MTA	DIODE	
D601-607	1SS254TA	DIODE	
D801, 802	1SS254TA	DIODE	
D851	1D3-E	DIODE	[MB]
		COIL(S)	
L202	RLQZN3R3KL-D	COIL	[MB]
L832	RLQZN4R7KL-D	COIL	
		TRANSFORMER	
T1	RTP1K4B015	POWER TRANSFORMER	⚠ [MB]
		OSCILLATOR	
X801	RSXA33M8J01T	OSCILLATOR(33MHz)	[MB]
		DISPLAY TUBE	
FL601	RSL0148-F	DISPLAY TUBE	[MB]
		SWITCH(ES)	
S601	EVQ21405R	SW, 0	
S602	EVQ21405R	SW, 1	
S603	EVQ21405R	SW, 2	
S604	EVQ21405R	SW, 3	
S605	EVQ21405R	SW, 4	
S606	EVQ21405R	SW, 5	
S607	EVQ21405R	SW, >10	
S608	EVQ21405R	SW, 10	
S609	EVQ21405R	SW, 9	
S610	EVQ21405R	SW, 8	
S611	EVQ21405R	SW, 7	
S612	EVQ21405R	SW, 6	
S613	EVQ21405R	SW, PLAY	
S614	EVQ21405R	SW, R. SKIP	
S615	EVQ21405R	SW, R. SEARCH	
S616	EVQ21405R	SW, PROGRAM	
S617	EVQ21405R	SW, DISC LINK	
S619	EVQ21405R	SW, STOP	
S620	EVQ21405R	SW, F. SKIP	
S621	EVQ21405R	SW, F. SEARCH	
S622	EVQ21405R	SW, RECALL	
S623	EVQ21405R	SW, SIDE A/B	
S624	EVQ21405R	SW, RANDAM	
S625	EVQ21405R	SW, TIME FADE	
S626	EVQ21405R	SW, OPEN/CLOSE	
S627	EVQ21405R	SW, PAUSE	
S628	EVQ21405R	SW, REPEAT	
S629	EVQ21405R	SW, CLEAR	
S630	EVQ21405R	SW, TAPE LENGTH	

Ref. No.	Part No.	Part Name & Description	Remarks
S631	EVQ21405R	SW, TIME MODE	
S632	EVQ21405R	SW, PEAK SEARCH	
S635	EVQ21405R	SW, AUTO CUE	
S651	RSP2B010	SW, POWER	⚠
		CONNECTOR(S)	
CN11	RJS1A6605	SOCKET(5P)	
CN12	RJT001H007	SOCKET(7P)	[MB]
CN21	RJS1A6605	SOCKET(5P)	
CN401	RJT001H014	SOCKET(14P)	[MB]
CN411-414	RJU003K010M1	SOCKET(10P)	
CN431	RJT001H003	SOCKET(3P)	[MB]
CN611-614	RJT003K010M1	CONNECTOR(10P)	
FC651	RWJ1804200XX	FLAT CABLE(4P)	
		JACK(S)	
JK201	RJJ33T01	JACK, SYNCHRO EDIT	
JK801	RJH3201N	JACK, LINE OUT	
		FUSE	
F1	XBA2C01TB0	FUSE, 250V T100mA	⚠
		<SERVO P. C. B.>	
		INTEGRATED CIRCUIT(S)	
IC6501	482220973234	I. C, PHOTO DIODE S. P.	[MB]
IC6503	482220973235	I. C, RADIAL ERROR S. P.	[MB]
IC6504	482220972587	I. C, FOCUS/RADIAL DRIVE	[MB]
		TRANSISTOR(S)	
Q6502	482213044121	TRANSISTOR	[MB]
		DIODE(S)	
D6505	482213030861	DIODE	[MB]
D6506	482213030861	DIODE	[MB]
		VARIABLE RESISTOR(S)	
VR3520	482210110685	V. R, LASER POWER ADJ.	[MB]
VR3569	482210011193	V. R, FOCUS OFFSET ADJ.	[MB]
		SWITCH	
S1001	482227612523	SW, TRAY	[MB]

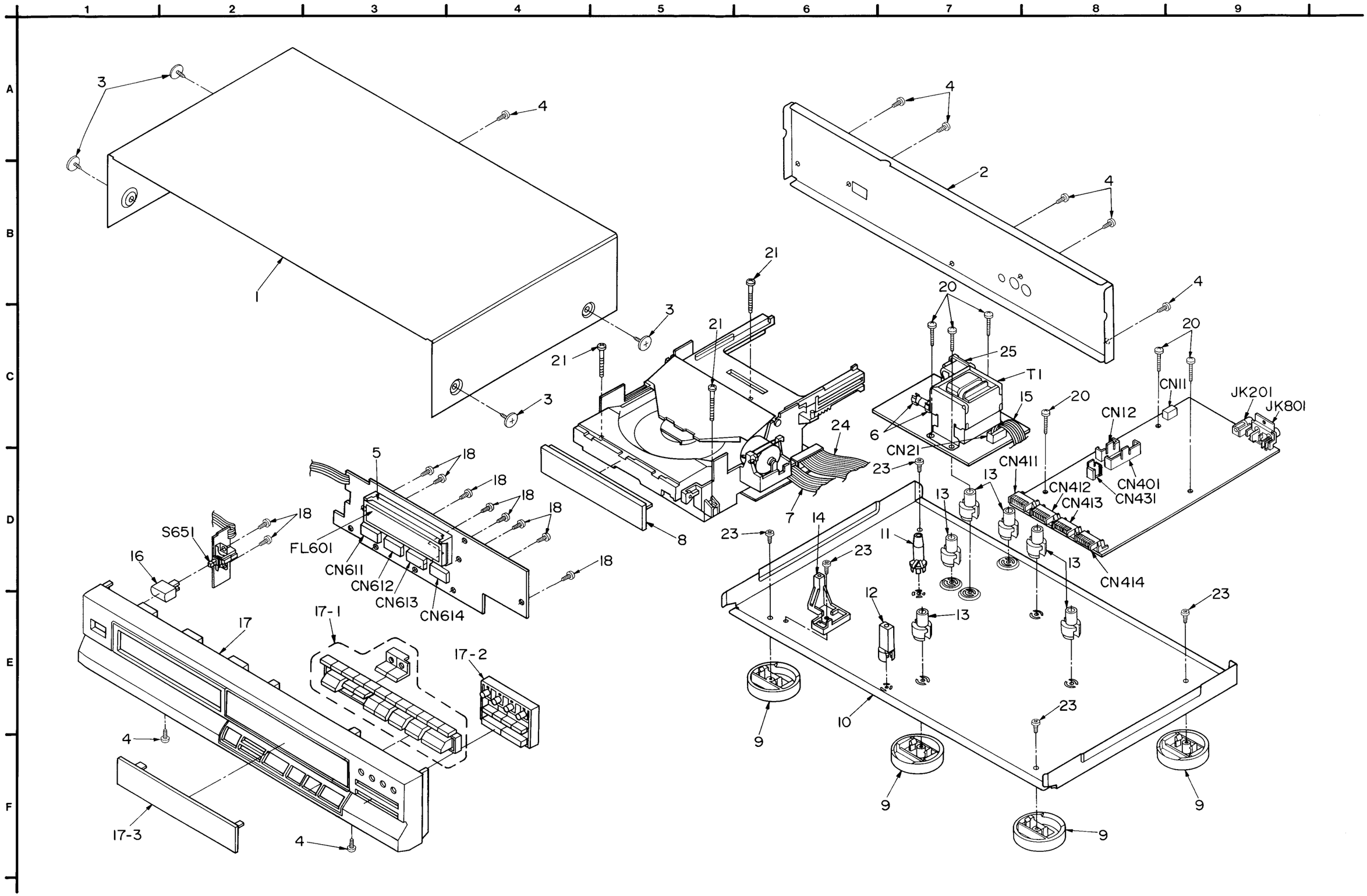
Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET PARTS	
1	RKM0098-K	CABINET	[MB]
2	RFKHLPG340AE	REAR PANEL ASS'Y	[MB]
2	RFKHLPG340AB	REAR PANEL ASS'Y	[MB]
3	SNE2129-1	SCREW	
4	XTBS3+8JFZ1	SCREW	
5	RMR0659-K	FL HOLDER	[MB]
6	EYF52BC	FUSE HOLDER	
7	REX0007	FLAT CABLE(7P)	[MB]
8	RGK0499-K	TRAY LID	[MB]
9	RKA0040B	FOOT	[MB]
10	RMK0178	BOTTOM BOARD	[MB]
11	RMR0020	SPACER(A)	[MB]
12	RMR0021	SPACER(B)	[MB]
13	RMR0377	PCB SUPPORT	[MB]
14	RMR0573-K1	SPACER(C)	[MB]
15	RWJ6405130XX	FLAT CABLE(5P)	[MB]
16	RGU0030	BUTTON, POWER	
17	RYP0403Z-K	FRONT PANEL ASS'Y	[MB]
17-1	RGU0807-K	BUTTON, PLAY etc.	[MB]
17-2	RGU0808-K	BUTTON, DISC LINK etc.	[MB]
17-3	RKW0245B-R	FL PANEL	[MB]
18	XTBS26+8J	SCREW	
20	XTB3+20JFZ	SCREW	
21	XTB3+35JFZ	SCREW	
23	XTB3+8JFZ	SCREW	
24	REX0285	FLAT CABLE(14P)	[MB]
25	SJS9236	AC INLET	⚠
		LOADING UNIT PARTS	
101	482244450603	DISC HOLDER	[MB]
102	482232550176	GROMMET, CABLE	[MB]
103	482232550177	GROMMET, CABLE	[MB]
104	482246692251	DISC TRAY	[MB]
106	482235810115	DRIVE BELT	[MB]
107	482232232359	WHEEL, GEAR	[MB]
108	482253251518	RING, RUBBER	[MB]
109	482240261081	GUIDE	[MB]
111	482240261132	GUIDE	[MB]
112	482252890638	ROLLER	[MB]
113	482249251902	SPRING, COMPRES.	[MB]
114	482246661587	FOAM	[MB]
116	482240261107	LEVER	[MB]
117	482249263659	SPRING, BLADE	[MB]
118	482244460568	DISC LID	[MB]
119	482249232883	SPRING, TENSION	[MB]
121	482252890639	ROLLER	[MB]
122	482246692257	PLATE	[MB]
123	482240261207	HOLDER	[MB]

Ref. No.	Part No.	Part Name & Description	Remarks
124	482252040177	SMALL BALL	[MB]
126	482253080503	RING, PRESSURE	[MB]
127	482269130209	OPTICAL PICKUP UNIT	[MB]
128	482240261196	SUPPORT	[MB]
129	482249263746	CLAMPING SPRING	[MB]
131	482236120998	LOADING MOTOR	[MB]
132	482240250244	BRACKET	[MB]
133	482249251935	SPRING, COMPRES.	[MB]
134	482270112729	CHASSIS	[MB]
		PACKING MATERIALS	
P1	RPG1377	PACKING CASE	[MB]
P2	RPN0647	CUSHION	[MB]
P3	RMR0024	LOCK SHAFT	[MB]
P4	XZB26X17C03	PROTECTION BAG(TRANSMITT)	
P5	XZB23X35C03	PROTECTION BAG(F.B)	
P6	XZB60X65A01Z	PROTECTION BAG	
		ACCESSORIES	
A1	RQT1681-B	INSTRUCTIONS MANUAL	(EB) [MB]
A1	RFKSLPG440AE	INSTRUCTIONS MANUAL	(E) [MB]
A1	RFKSLPG440AG	INSTRUCTIONS MANUAL	(EG) [MB]
A2	RJA0018-1K	AC POWER SUPPLY CORD	⚠(E, EG)
A2	VJA0733	AC POWER SUPPLY CORD	⚠(EB)
A3	RQA0013	WARRANTY CARD	
A4	RQCB0169	SERVICE CENTER LIST	
A5	SJP2249-3	STEREO CONNECTION CABLE	
A6	RQCA0059	LOCK CAUTION SHEET	[MB]

■ LOADING UNIT PARTS LOCATION



■ CABINET PARTS LOCATION



Notes : * Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
* Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM) , 1M=1,000k (OHM)

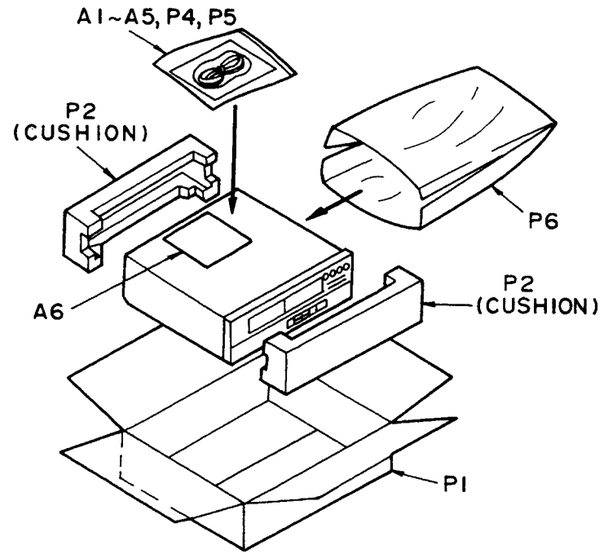
Ref. No.	Part No.	Values & Remarks
		RESISTORS
R11	ERDS2TJ182	1/4W 1.8K
R12, 13	ERDS2TJ102	1/4W 1K
R14	ERDS2TJ103	1/4W 10K
R15	ERDS2TJ822	1/4W 8.2K
R16, 17	ERDS2TJ103	1/4W 10K
R20	ERDS2TJ102	1/4W 1K
R23	ERDS2TJ222	1/4W 2.2K
R25	ERDS2TJ222	1/4W 2.2K
R51	ERDS2TJ331	1/4W 330
R52	ERDS2TJ272T	1/4W 2.7K
R53, 54	ERDS2TJ472	1/4W 4.7K
R201	ERDS2TJ100	1/4W 10
R202	ERDS2TJ102	1/4W 1K
R203	ERDS2TJ273	1/4W 27K
R301	ERDS2TJ182	1/4W 1.8K
R302	ERDS2TJ823T	1/4W 82K
R303	ERDS2TJ104	1/4W 100K
R304	ERDS2TJ471	1/4W 470
R315	ERDS2TJ104	1/4W 100K
R351	ERDS2TJ103	1/4W 10K
R352	ERDS2TJ104	1/4W 100K
R353	ERDS2TJ123	1/4W 12K
R354	ERDS2TJ104	1/4W 100K
R355, 356	ERDS2TJ333	1/4W 33K
R357	ERD25FJ6R8	1/4W 6.8 ⚠
R401	ERDS2TJ104	1/4W 100K
R411, 412	ERDS2TJ472	1/4W 4.7K
R431, 432	ERDS2TJ223	1/4W 22K
R433	ERDS2TJ104	1/4W 100K
R434	ERDS2TJ224T	1/4W 220K
R435	ERDS2TJ104	1/4W 100K
R436	ERDS2TJ224T	1/4W 220K
R437, 438	ERDS2TJ223	1/4W 22K
R601	ERDS2TJ120T	1/4W 12
R801, 802	ERDS2TJ163T	1/4W 16K
R803-806	ERDS2TJ472	1/4W 4.7K
R807, 808	ERDS2TJ163T	1/4W 16K
R809-812	ERDS2TJ393	1/4W 39K
R813, 814	ERDS2TJ153	1/4W 15K
R815, 816	ERDS2TJ183T	1/4W 18K
R817, 818	ERDS2TJ153	1/4W 15K
R819, 820	ERDS2TJ471	1/4W 470
R821, 822	ERDS2TJ473	1/4W 47K
R823, 824	ERDS2TJ331	1/4W 330
R825, 826	ERDS2TJ102	1/4W 1K
R831, 832	ERDS2TJ470	1/4W 47

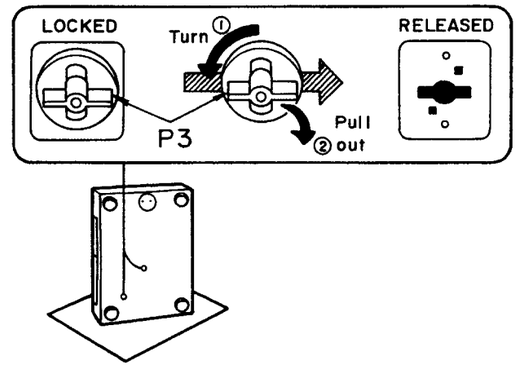
Ref. No.	Part No.	Values & Remarks
R833	ERDS2TJ472	1/4W 4.7K
R834	ERDS2TJ102	1/4W 1K
R840	ERDS2TJ181T	1/4W 180
R851	ERDS2TJ471	1/4W 470
R854	ERDS2TJ472	1/4W 4.7K
R861	ERDS2TJ102	1/4W 1K
		CAPACITORS
C1, 2	ECFTD103KXL	50V 0.01U
C10	ECFR1E104ZF5	25V 0.1U
C11	ECA1CM222B	16V 2200U ⚠
C12	ECEA1CU102	16V 1000U ⚠
C14, 15	ECEA0JKA470B	6.3V 47U
C16	ECEA1EU101	25V 100U
C17, 18	ECEA1HU101	50V 100U
C19	ECEA1CKA101B	16V 100U
C51	ECEA1AKA220B	10V 22U
C201, 202	ECBT1C103NS5	16V 0.01U
C301	ECBT1C103NS5	16V 0.01U
C302	ECBT1H270J5	50V 27P
C303, 304	ECFR1E104ZF5	25V 0.1U
C305	ECBT1H102KB5	50V 1000P
C306	ECFR1E223KB	25V 0.022U
C307	ECQV1H474JM3	50V 0.47U
C308	ECBT1H102KB5	50V 1000P
C309	ECFR1E104ZF5	25V 0.1U
C312	ECBT1C103NS5	16V 0.01U
C351	ECBT1H102KB5	50V 1000P
C401	ECFR1E104ZF5	25V 0.1U
C402	ECEA0JKA470B	6.3V 47U
C404	ECFR1E104ZF5	25V 0.1U
C405	ECEA0JKA470B	6.3V 47U
C406	ECBT1H102KB5	50V 1000P
C651, 652	ECBT1H102KB5	50V 1000P
C801, 802	ECBT1H121KB5	50V 120P
C803, 804	ECBT1H102KB5	50V 1000P
C805, 806	ECBT1H121KB5	50V 120P
C813, 814	ECEA1CKN220B	16V 22U
C815, 816	ECBT1H102KB5	50V 1000P
C817	ECFR1E104ZF5	25V 0.1U
C831, 832	ECEA0JU331B	6.3V 330U
C833, 834	ECFR1E104ZF5	25V 0.1U
C838	ECBT1H5R6K5	50V 5.6P
C840	ECBT1H5R6K5	50V 5.6P
C841	ECEA0JKA101B	6.3V 100U
C842	ECFR1E104ZF5	25V 0.1U
C844	ECBT1H270J5	50V 27P
C851	ECEA0JU471	6.3V 470U

Ref. No.	Part No.	Values & Remarks
		<SERVO P.C.B.>
		RESISTORS
R3501	482205024702	1/8W 4.7K [MB]
R3502	482205110104	1/8W 100K [MB]
R3505	482205110123	1/4W 12K [MB]
R3506	482205110101	1/8W 100 [MB]
R3507	482205120222	1/8W 2.2K [MB]
R3508	482205110243	1/4W 24K [MB]
R3509	482205110562	1/8W 5.6K [MB]
R3510	482205110103	1/8W 10K [MB]
R3521	482205110221	1/8W 220 [MB]
R3522	482205210229	1/3W 22 [MB]
R3523	482205210129	1/3W 12 [MB]
R3524	482205110101	1/8W 100 [MB]
R3530	482205110473	1/4W 47K [MB]
R3531	482205110153	1/4W 15K [MB]
R3533	482205110152	1/4W 5.1K [MB]
R3534	482205110224	1/8W 220K [MB]
R3535	482205021203	3/5W 12K [MB]
R3540	482205024708	3/5W 4.7 [MB]
R3541	482205110682	1/4W 6.8K [MB]
R3542	482205110829	1/8W 82 [MB]
R3543	482205110682	1/8W 6.8K [MB]
R3550	482205110182	1/4W 1.8K [MB]
R3555	482205110183	1/4W 18K [MB]
R3560	482211191494	1/8W 11K [MB]
R3561	482205110154	1/4W 150K [MB]
R3562	482205021204	3/5W 120K [MB]
R3563	482205110563	1/8W 56K [MB]
R3564	482211191495	1/8W 160K [MB]
R3565	482205210279	1/3W 27 [MB]
R3566	482205110229	1/8W 22 [MB]
R3567	482205028203	1/8W 82K [MB]
R3568	482205110474	1/4W 470K [MB]
		CHIP JUMPER(S)
R3801	482205110008	JUMPER [MB]
R3802	482205110008	JUMPER [MB]
		CAPACITORS
C2501	482212232863	50V 0.022U [MB]
C2502	482212440433	25V 47U [MB]
C2503	482212232863	50V 0.022U [MB]
C2504	482212231727	63V 470P [MB]
C2505	482212440433	25V 47U [MB]

Ref. No.	Part No.	Values & Remarks
C2506	482212233496	63V 0.1U [MB]
C2507	482212231644	63V 2200P [MB]
C2508	532212142491	100V 0.047U [MB]
C2509	482212231772	50V 47P [MB]
C2510	482212232442	50V 0.01U [MB]
C2511	482212231746	50V 1000P [MB]
C2513	482212143375	63V 0.22U [MB]
C2514	482212151252	63V 0.47U [MB]
C2515	482212231746	50V 1000P [MB]
C2520	482212231965	63V 220P [MB]
C2521	482212422027	25V 47U [MB]
C2530	482212151321	63V 8200P [MB]
C2531	482212151321	63V 8200P [MB]
C2532	482212440272	16V 33U [MB]
C2534	532212142661	63V 0.33U [MB]
C2535	482212231981	50V 0.033U [MB]
C2536	482212231981	50V 0.033U [MB]
C2537	482212143375	63V 0.22U [MB]
C2538	482212143375	63V 0.22U [MB]
C2540	482212441583	50V 0.68U [MB]
C2541	482212232863	50V 0.022U [MB]
C2542	482212232863	50V 0.022U [MB]
C2543	482212440196	16V 220U [MB]
C2544	482212440196	16V 220U [MB]
C2545	482212233496	63V 0.1U [MB]
C2546	482212233496	63V 0.1U [MB]
C2547	482212232863	50V 0.022U [MB]
C2552	482212143526	100V 0.047U [MB]
C2560	482212231784	50V 4700P [MB]
C2561	482212151252	63V 0.47U [MB]
C2562	532212142661	63V 0.33U [MB]
C2563	482212233496	63V 0.1U [MB]
C2625	482212231765	50V 100P [MB]

■ PACKAGING





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